

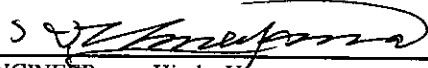
DATA OF SPURIOUS EMISSIONS(30MHz to 1000MHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
 EQUIPMENT : Digital Video Camera Recorder
 MODEL : DCR-IP220
 S/N : 95
 FCC ID : AK8DCRIP220
 POWER : AC120V/60Hz
 MODE : Tx (2402MHz)

REPORT NO : 22IE0025-HO
 REGULATION : Fcc Part15 Subpart C 15.247(c)
 TEST DISTANCE : 3m
 DATE : 2002/6/4
 Temperature : 26°C
 Humidity : 49%


 ENGINEER : Hiroka Uneyama

No.	FREQ [MHz]	READING		ANT Factor [dB]	AMP GAIN [dB]	LOSS [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR [dBuV/m]	VER [dBuV/m]				HOR [dBuV/m]	VER [dBuV/m]		HOR [dB]	VER [dB]
1*	60.00	35.6	34.3	7.4	24.1	7.4	26.3	25.0	68.9	42.6	43.9
2*	90.00	31.2	31.2	8.2	24.0	7.9	23.3	23.3	68.9	45.6	45.6
3	135.00	37.2	39.3	14.0	24.0	8.4	35.6	37.7	43.5	7.9	5.8
4*	155.24	38.7	35.6	14.9	24.0	8.6	38.2	35.1	68.9	30.7	33.8
5*	297.00	36.2	32.4	19.7	23.8	9.7	41.8	38.0	68.9	27.1	30.9
6*	317.25	43.2	40.7	14.9	23.8	9.8	44.1	41.6	68.9	24.8	27.3
7*	337.49	44.2	36.6	15.6	23.8	9.8	45.8	38.2	68.9	23.1	30.7

CALCULATION: READING+ANT.FACTOR+LOSS(CABLE+ATTEN)-AMP.GAIN

RxANTENNA: Biconical Antena(30-300MHz), Logperriodic Antenna(300-1000MHz)

All other emissions were at least 20dB below the specification limit.

*: The limit values at frequencies excepting restricted bands indicated in 15.205 are values 20dB below the peak output power at each channel.

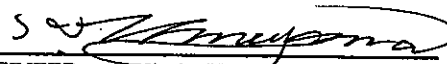
DATA OF SPURIOUS EMISSIONS(30MHz to 1000MHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
 EQUIPMENT : Digital Video Camera Recorder
 MODEL : DCR-IP220
 S/N : 95
 FCC ID : AK8DCRIP220
 POWER : AC120V/60Hz
 MODE : Tx (2441MHz)

REPORT NO : 22IE0025-HO
 REGULATION : Fcc Part15 Subpart C 15.247(c)
 TEST DISTANCE : 3m
 DATE : 2002/6/4
 Temperature : 26℃
 Humidity : 49%


 ENGINEER : Hiroka Umeyama

No.	FREQ [MHz]	READING HOR VER [dBuV/m]		ANT Factor [dB]	AMP GAIN [dB]	LOSS [dB]	RESULT HOR VER [dBuV/m]		Limit [dBuV/m]	MARGIN HOR VER [dB]	
1*	60.00	37.4	37.1	7.4	24.1	7.4	28.1	27.8	69.4	41.3	41.6
2*	90.00	33.3	34.2	8.2	24.0	7.9	25.4	26.3	69.4	44.0	43.1
3	135.00	34.9	39.2	14.0	24.0	8.4	33.3	37.6	43.5	10.2	5.9
4*	155.24	32.6	34.4	14.9	24.0	8.6	32.1	33.9	69.4	37.3	35.5
5*	297.00	34.1	35.0	19.7	23.8	9.7	39.7	40.6	69.4	29.7	28.8
6*	317.25	43.9	39.0	14.9	23.8	9.8	44.8	39.9	69.4	24.6	29.5
7*	337.49	42.2	38.7	15.6	23.8	9.8	43.8	40.3	69.4	25.6	29.1

CALCULATION: READING+ANT.FACTOR+LOSS(CABLE+ATTEN)-AMP.GAIN

RxANTENNA: Biconical Antena(30-300MHz), Logperriodic Antenna(300-1000MHz)

All other emissions were at least 20dB below the specification limit.

*: The limit values at frequencies excepting restricted bands indicated in 15.205 are values 20dB below the peak output power at each channel.

DATA OF SPURIOUS EMISSIONS(30MHz to 1000MHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
 EQUIPMENT : Digital Video Camera Recorder
 MODEL : DCR-IP220
 S/N : 95
 FCC ID : AK8DCRIP220
 POWER : AC120V/60Hz
 MODE : Tx (2480MHz)

REPORT NO : 22IE0025-HO
 REGULATION : Fcc Part15 Subpart C 15.247(c)
 TEST DISTANCE : 3m
 DATE : 2002/6/4
 Temperature : 26°C
 Humidity : 49%


 ENGINEER : Hiroka Umeyama

No.	FREQ [MHz]	READING HOR VER [dBuV/m]		ANT Factor [dB]	AMP GAIN [dB]	LOSS [dB]	RESULT HOR VER [dBuV/m]		Limit [dBuV/m]	MARGIN HOR VER [dB]	
1*	60.00	36.3	35.7	7.4	24.1	7.4	27.0	26.4	68.5	41.5	42.1
2*	90.00	30.8	33.6	8.2	24.0	7.9	22.9	25.7	68.5	45.6	42.8
3	135.00	38.1	38.4	14.0	24.0	8.4	36.5	36.8	43.5	7.0	6.7
4*	155.24	37.4	35.6	14.9	24.0	8.6	36.9	35.1	68.5	31.6	33.4
5*	297.00	35.8	32.9	19.7	23.8	9.7	41.4	38.5	68.5	27.1	30.0
6*	317.25	45.0	35.2	14.9	23.8	9.8	45.9	36.1	68.5	22.6	32.4
7*	337.49	41.1	34.1	15.6	23.8	9.8	42.7	35.7	68.5	25.8	32.8

CALCULATION: READING+ANT.FACTOR+LOSS(CABLE+ATTEN)-AMP.GAIN

RxANTENNA: Biconical Antena(30-300MHz), Logperriodic Antenna(300-1000MHz)

All other emissions were at least 20dB below the specification limit.

*: The limit values at frequencies excepting restricted bands indicated in 15.205 are values 20dB below the peak output power at each channel.

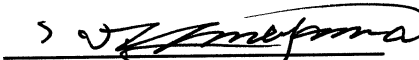
DATA OF SPURIOUS EMISSIONS(1GHz to 26GHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
EQUIPMENT : Digital Video Camera Recorder
MODEL : DCR-IP220
S/N : 95
FCC ID : AK8DCRIP220
POWER : AC120V/60Hz
MODE : Tx (2402MHz)

REPORT NO : 22IE0025-HO
REGULATION : Fcc Part15 Subpart C 15.247(c)
TEST DISTANCE : 3 and 1 m
DATE : 2002/6/5
Temperature : 24°C
Humidity : 62%


ENGINEER : Hiroka Umeyama

PK DETECT

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	ATTEN [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER						HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]						[dB]	[dB]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + (Band Pass or ATTEN).													
0	1201.0	45.9	45.9	25.1	37.3	3.3	0.0	0.0	37.0	37.0	74.0	37.0	37.0
1	4804.0	45.8	45.1	31.1	36.4	7.3	0.3	0.0	48.1	47.4	74.0	25.9	26.6
2	7206.0	42.6	43.2	35.3	36.5	9.4	0.0	0.0	50.8	51.4	74.0	23.2	22.6
3	9608.0	43.2	43.6	38.0	37.0	11.1	0.0	0.0	55.3	55.7	74.0	18.7	18.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac)													
4	12010.0	43.1	43.4	38.9	35.9	12.5	0.0	0.0	49.1	49.4	74.0	24.9	24.6
5	14412.0	42.6	42.5	40.6	35.8	13.6	0.0	0.0	51.5	51.4	74.0	22.5	22.6
6	16814.0	42.7	42.3	39.3	37.2	13.7	0.0	0.0	49.0	48.6	74.0	25.0	25.4
7	19216.0	42.2	42.9	40.9	35.8	15.3	0.0	0.0	53.1	53.8	74.0	20.9	20.2
8	21618.0	43.8	43.2	40.3	37.0	17.8	0.0	0.0	55.4	54.8	74.0	18.6	19.2
9	24020.0	43.8	43.8	39.8	35.5	17.0	0.0	0.0	55.6	55.6	74.0	18.4	18.4

AV DETECT

AV DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	ATTEN [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER						HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]						[dB]	[dB]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + (Band Pass or ATTEN).													
0	1201.0	34.2	34.2	25.1	37.3	3.3	0.0	0.0	25.3	25.3	54.0	28.7	28.7
1	4804.0	36.1	34.3	31.1	36.4	7.3	0.3	0.0	38.4	36.6	54.0	15.6	17.4
2	7206.0	30.6	30.6	35.3	36.5	9.4	0.0	0.0	38.8	38.8	54.0	15.2	15.2
3	9608.0	31.0	31.0	38.0	37.0	11.1	0.0	0.0	43.1	43.1	54.0	10.9	10.9
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac)													
4	12010.0	31.2	31.2	38.9	35.9	12.5	0.0	0.0	37.2	37.2	54.0	16.8	16.8
5	14412.0	30.3	30.3	40.6	35.8	13.6	0.0	0.0	39.2	39.2	54.0	14.8	14.8
6	16814.0	30.4	30.4	39.3	37.2	13.7	0.0	0.0	36.7	36.7	54.0	17.3	17.3
7	19216.0	30.0	30.5	40.9	35.8	15.3	0.0	0.0	40.9	41.4	54.0	13.1	12.6
8	21618.0	31.4	31.4	40.3	37.0	17.8	0.0	0.0	43.0	43.0	54.0	11.0	11.0
9	24020.0	31.5	31.5	39.8	35.5	17.0	0.0	0.0	43.3	43.3	54.0	10.7	10.7

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) = 9.5 \text{ dB}$

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

SECTION 3: Test specification, procedures and results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart C
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted Emissions
Section 15.247 Operation within the Band 902-928MHz, 2400-2483.5MHz and
5725-5850MHz

3.2 Procedures and results

No	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	Conducted emission	ANSI C63.4:2000	Section 15.207	-	N/A	18.0dB 11.2986MHz, L1	Complied
2	Carrier Frequency Separation	ANSI C63.4:2000	Section15.247(a)(1)	Conducted	N/A	-	Complied
3	20dB Bandwidth	ANSI C63.4:2000	Section15.247(a)(1)(ii)	Conducted	N/A	-	Complied
4	Number of Hopping Frequency	ANSI C63.4:2000	Section15.247(a)(1)(ii)	Conducted	N/A	-	Complied
5	Dwell time	ANSI C63.4:2000	Section15.247(a)(1)(ii)	Conducted	N/A	-	Complied
6	Maximum Peak Output Power	ANSI C63.4:2000	Section15.247(b)(1)	Conducted/ Radiated	N/A	-	Complied
7	Band Edge Compliance	ANSI C63.4:2000	Section15.247(c)	Conducted	N/A	-	Complied
8	Spurious Emission	ANSI C63.4:2000	Section15.247(c)	Conducted/ Radiated	N/A	5.8dB 135.0MHz Vertical	Complied

3.3 Additions to Standards

No addition, deviation or exclusion has been made from standards.

3.4 Confirmation

A-PEX INTERNATIONAL hereby confirms that E.U.T., in the configuration tested, complies with the specifications FCC Part 15 Subpart C Section 15.207 and 247.

A-PEX International Co., Ltd.
EMC Head Office Division.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone: +81 596 24 8116
Facsimile: +81 596 24 8124

DATA OF SPURIOUS EMISSIONS(30MHz to 1000MHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
 EQUIPMENT : Digital Video Camera Recorder
 MODEL : DCR-IP220
 S/N : 95
 FCC ID : AK8DCRIP220
 POWER : AC120V/60Hz
 MODE : Tx (2402MHz)

REPORT NO : 22IE0025-HO
 REGULATION : Fcc Part15 Subpart C 15.247(c)
 TEST DISTANCE : 3m
 DATE : 2002/6/4
 Temperature : 26°C
 Humidity : 49%


 ENGINEER : Hiroka Uneyama

No.	FREQ [MHz]	READING		ANT Factor [dB]	AMP GAIN [dB]	LOSS [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR	VER				HOR	VER		HOR	VER
		[dBuV/m]					[dBuV/m]			[dB]	[dB]
1*	60.00	35.6	34.3	7.4	24.1	7.4	26.3	25.0	68.9	42.6	43.9
2*	90.00	31.2	31.2	8.2	24.0	7.9	23.3	23.3	68.9	45.6	45.6
3	135.00	37.2	39.3	14.0	24.0	8.4	35.6	37.7	43.5	7.9	5.8
4*	155.24	38.7	35.6	14.9	24.0	8.6	38.2	35.1	68.9	30.7	33.8
5*	297.00	36.2	32.4	19.7	23.8	9.7	41.8	38.0	68.9	27.1	30.9
6*	317.25	43.2	40.7	14.9	23.8	9.8	44.1	41.6	68.9	24.8	27.3
7*	337.49	44.2	36.6	15.6	23.8	9.8	45.8	38.2	68.9	23.1	30.7

CALCULATION: READING+ANT.FACTOR+LOSS(CABLE+ATTEN)-AMP.GAIN

RxANTENNA: Biconical Antena(30-300MHz), Logperriodic Antenna(300-1000MHz)

All other emissions were at least 20dB below the specification limit.

*: The limit values at frequencies excepting restricted bands indicated in 15.205 are values 20dB below the peak output power at each channel.

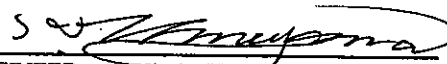
DATA OF SPURIOUS EMISSIONS(30MHz to 1000MHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
 EQUIPMENT : Digital Video Camera Recorder
 MODEL : DCR-IP220
 S/N : 95
 FCC ID : AK8DCRIP220
 POWER : AC120V/60Hz
 MODE : Tx (2441MHz)

REPORT NO : 22IE0025-HO
 REGULATION : Fcc Part15 Subpart C 15.247(c)
 TEST DISTANCE : 3m
 DATE : 2002/6/4
 Temperature : 26℃
 Humidity : 49%


 ENGINEER : Hiroka Umeyama

No.	FREQ [MHz]	READING HOR VER [dBuV/m]		ANT Factor [dB]	AMP GAIN [dB]	LOSS [dB]	RESULT HOR VER [dBuV/m]		Limit [dBuV/m]	MARGIN HOR VER [dB]	
1*	60.00	37.4	37.1	7.4	24.1	7.4	28.1	27.8	69.4	41.3	41.6
2*	90.00	33.3	34.2	8.2	24.0	7.9	25.4	26.3	69.4	44.0	43.1
3	135.00	34.9	39.2	14.0	24.0	8.4	33.3	37.6	43.5	10.2	5.9
4*	155.24	32.6	34.4	14.9	24.0	8.6	32.1	33.9	69.4	37.3	35.5
5*	297.00	34.1	35.0	19.7	23.8	9.7	39.7	40.6	69.4	29.7	28.8
6*	317.25	43.9	39.0	14.9	23.8	9.8	44.8	39.9	69.4	24.6	29.5
7*	337.49	42.2	38.7	15.6	23.8	9.8	43.8	40.3	69.4	25.6	29.1

CALCULATION: READING+ANT.FACTOR+LOSS(CABLE+ATTEN)-AMP.GAIN

RxANTENNA: Biconical Antena(30-300MHz), Logperriodic Antenna(300-1000MHz)

All other emissions were at least 20dB below the specification limit.

*: The limit values at frequencies excepting restricted bands indicated in 15.205 are values 20dB below the peak output power at each channel.

DATA OF SPURIOUS EMISSIONS(30MHz to 1000MHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
 EQUIPMENT : Digital Video Camera Recorder
 MODEL : DCR-IP220
 S/N : 95
 FCC ID : AK8DCRIP220
 POWER : AC120V/60Hz
 MODE : Tx (2480MHz)

REPORT NO : 22IE0025-HO
 REGULATION : Fcc Part15 Subpart C 15.247(c)
 TEST DISTANCE : 3m
 DATE : 2002/6/4
 Temperature : 26°C
 Humidity : 49%


 ENGINEER : Hiroka Umeyama

No.	FREQ [MHz]	READING HOR VER [dBuV/m]		ANT Factor [dB]	AMP GAIN [dB]	LOSS [dB]	RESULT HOR VER [dBuV/m]		Limit [dBuV/m]	MARGIN HOR VER [dB]	
1*	60.00	36.3	35.7	7.4	24.1	7.4	27.0	26.4	68.5	41.5	42.1
2*	90.00	30.8	33.6	8.2	24.0	7.9	22.9	25.7	68.5	45.6	42.8
3	135.00	38.1	38.4	14.0	24.0	8.4	36.5	36.8	43.5	7.0	6.7
4*	155.24	37.4	35.6	14.9	24.0	8.6	36.9	35.1	68.5	31.6	33.4
5*	297.00	35.8	32.9	19.7	23.8	9.7	41.4	38.5	68.5	27.1	30.0
6*	317.25	45.0	35.2	14.9	23.8	9.8	45.9	36.1	68.5	22.6	32.4
7*	337.49	41.1	34.1	15.6	23.8	9.8	42.7	35.7	68.5	25.8	32.8

CALCULATION: READING+ANT.FACTOR+LOSS(CABLE+ATTEN)-AMP.GAIN

RxANTENNA: Biconical Antena(30-300MHz), Logperriodic Antenna(300-1000MHz)

All other emissions were at least 20dB below the specification limit.

*: The limit values at frequencies excepting restricted bands indicated in 15.205 are values 20dB below the peak output power at each channel.

DATA OF SPURIOUS EMISSIONS(1GHz to 26GHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
EQUIPMENT : Digital Video Camera Recorder
MODEL : DCR-IP220
S/N : 95
FCC ID : AK8DCRIP220
POWER : AC120V/60Hz
MODE : Tx (2441MHz)

REPORT NO : 22IE0025-HO
REGULATION : Fcc Part15 Subpart C 15.247(c)
TEST DISTANCE : 3 and 1 m
DATE : 2002/6/5
Temperature : 24℃
Humidity : 62%


ENGINEER : Hiroka Umeyama

PK DETECT

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	ATTEN [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER						HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]						[dB]	[dB]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + (Band Pass or ATTEN).													
0	1220.0	47.2	46.9	25.1	37.3	3.4	0.0	0.0	38.4	38.1	74.0	35.6	35.9
1	4882.0	46.3	47.6	31.3	36.4	7.3	0.4	0.0	48.9	50.2	74.0	25.1	23.8
2	7323.0	43.2	43.2	35.5	36.6	9.4	0.0	0.0	51.5	51.5	74.0	22.5	22.5
3	9764.0	43.0	43.1	38.2	37.0	11.2	0.0	0.0	55.4	55.5	74.0	18.6	18.5
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac)													
4	12205.0	43.1	43.2	38.8	36.0	12.5	0.0	0.0	48.9	49.0	74.0	25.1	25.0
5	14646.0	43.5	43.2	40.6	36.1	13.8	0.0	0.0	52.3	52.0	74.0	21.7	22.0
6	17087.0	42.2	42.5	39.6	35.8	13.8	0.0	0.0	50.3	50.6	74.0	23.7	23.4
7	19528.0	43.0	43.2	40.4	36.1	15.7	0.0	0.0	53.5	53.7	74.0	20.5	20.3
8	21969.0	44.8	44.4	40.5	36.7	18.7	0.0	0.0	57.8	57.4	74.0	16.2	16.6
9	24410.0	43.6	43.9	40.2	36.4	17.7	0.0	0.0	55.6	55.9	74.0	18.4	18.1

AV DETECT

AV DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	ATTEN [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER						HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]						[dB]	[dB]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + (Band Pass or ATTEN).													
0	1220.0	37.7	37.5	25.1	37.3	3.4	0.0	0.0	28.9	28.7	54.0	25.1	25.3
1	4882.0	37.5	38.9	31.3	36.4	7.3	0.4	0.0	40.1	41.5	54.0	13.9	12.5
2	7323.0	30.7	30.7	35.5	36.6	9.4	0.0	0.0	39.0	39.0	54.0	15.0	15.0
3	9764.0	30.8	30.8	38.2	37.0	11.2	0.0	0.0	43.2	43.2	54.0	10.8	10.8
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac)													
4	12205.0	30.9	30.9	38.8	36.0	12.5	0.0	0.0	36.7	36.7	54.0	17.3	17.3
5	14646.0	30.7	30.7	40.6	36.1	13.8	0.0	0.0	39.5	39.5	54.0	14.5	14.5
6	17087.0	30.0	30.0	39.6	35.8	13.8	0.0	0.0	38.1	38.1	54.0	15.9	15.9
7	19528.0	30.4	30.3	40.4	36.1	15.7	0.0	0.0	40.9	40.8	54.0	13.1	13.2
8	21969.0	32.4	32.4	40.5	36.7	18.7	0.0	0.0	45.4	45.4	54.0	8.6	8.6
9	24410.0	31.6	31.6	40.2	36.4	17.7	0.0	0.0	43.6	43.6	54.0	10.4	10.4

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) = 9.5$ dB

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(1GHz to 26GHz)

A-PEX INTERNATIONAL CO., LTD.

EMC HEAD OFFICE DIVISON No.1 SEMI ANECHOIC CHAMBER

COMPANY : SONY Corporation
 EQUIPMENT : Digital Video Camera Recorder
 MODEL : DCR-IP220
 S/N : 95
 FCC ID : AK8DCRIP220
 POWER : AC120V/60Hz
 MODE : Tx (2480MHz)

REPORT NO : 22IE0025-HO
 REGULATION : Fcc Part15 Subpart C 15.247(c)
 TEST DISTANCE : 3 and 1 m
 DATE : 2002/6/5
 Temperature : 24°C
 Humidity : 62%

S. J. Umeyama
 ENGINEER : Hiroka Umeyama

PK DETECT

PK DETECT													
No.	FREQ [MHz]	T/R READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	ATTEN [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER						HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]						[dB]	[dB]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + (Band Pass or ATTEN).													
0	1239.5	47.2	48.0	25.1	37.3	3.7	0.0	0.0	38.8	39.6	74.0	35.2	34.4
1	4960.0	48.2	47.3	31.4	36.4	7.4	0.5	0.0	51.1	50.2	74.0	22.9	23.8
2	7440.0	43.2	43.5	35.6	36.7	9.4	0.0	0.0	51.5	51.8	74.0	22.5	22.2
3	9920.0	43.1	43.4	38.1	37.1	11.2	0.0	0.0	55.3	55.6	74.0	18.7	18.4
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac)													
4	12400.0	43.5	43.8	38.8	36.0	12.6	0.0	0.0	49.4	49.7	74.0	24.6	24.3
5	14880.0	43.1	43.2	40.5	36.4	14.0	0.0	0.0	51.7	51.8	74.0	22.3	22.2
6	17360.0	42.5	42.3	40.4	36.6	14.1	0.0	0.0	50.9	50.7	74.0	23.1	23.3
7	19840.0	43.0	42.9	40.7	36.3	16.0	0.0	0.0	53.9	53.8	74.0	20.1	20.2
8	22320.0	45.2	45.1	40.7	36.7	18.1	0.0	0.0	57.8	57.7	74.0	16.2	16.3
9	24410.0	43.6	43.9	40.2	36.4	17.7	0.0	0.0	55.6	55.9	74.0	18.4	18.1

AV DETECT

V DETECT													
No.	FREQ [MHz]	T/R READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	ATTEN [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER						HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]						[dB]	[dB]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + (Band Pass or ATTEN).													
0	1239.5	36.7	38.3	25.1	37.3	3.7	0.0	0.0	28.3	29.9	54.0	25.7	24.1
1	4960.0	40.5	38.5	31.4	36.4	7.4	0.5	0.0	43.4	41.4	54.0	10.6	12.6
2	7440.0	31.0	30.9	35.6	36.7	9.4	0.0	0.0	39.3	39.2	54.0	14.7	14.8
3	9920.0	31.0	31.0	38.1	37.1	11.2	0.0	0.0	43.2	43.2	54.0	10.8	10.8
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac)													
4	12400.0	31.4	31.3	38.8	36.0	12.6	0.0	0.0	37.3	37.2	54.0	16.7	16.8
5	14880.0	30.8	30.8	40.5	36.4	14.0	0.0	0.0	39.4	39.4	54.0	14.6	14.6
6	17360.0	30.3	30.2	40.4	36.6	14.1	0.0	0.0	38.7	38.6	54.0	15.3	15.4
7	19840.0	30.5	30.4	40.7	36.3	16.0	0.0	0.0	41.4	41.3	54.0	12.6	12.7
8	22320.0	32.8	32.8	40.7	36.7	18.1	0.0	0.0	45.4	45.4	54.0	8.6	8.6
9	24800.0	31.7	31.7	40.2	36.4	17.7	0.0	0.0	43.7	43.7	54.0	10.3	10.3

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) = 9.5 \text{ dB}$

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF RADIATED EMISSION TEST

A-PEX INTERNATIONAL EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER
Date : 2002/06/05 10:01:45

Applicant : SONY Corporation
Kind of EUT : Digital Video Camera Recorder
Model No. : DCR-IP220
Serial No. : 95

Report No. : 221E0025-H0
Power : AC 120V / 60Hz
Temp°C/Humi% : 26 / 49
Operator : HIROKA UMEYAMA

S. UmeYama

Mode / Remarks : Tx (2402MHz)

LIMIT : FCC15C § 15.247(c)
MARGIN : 6 dB

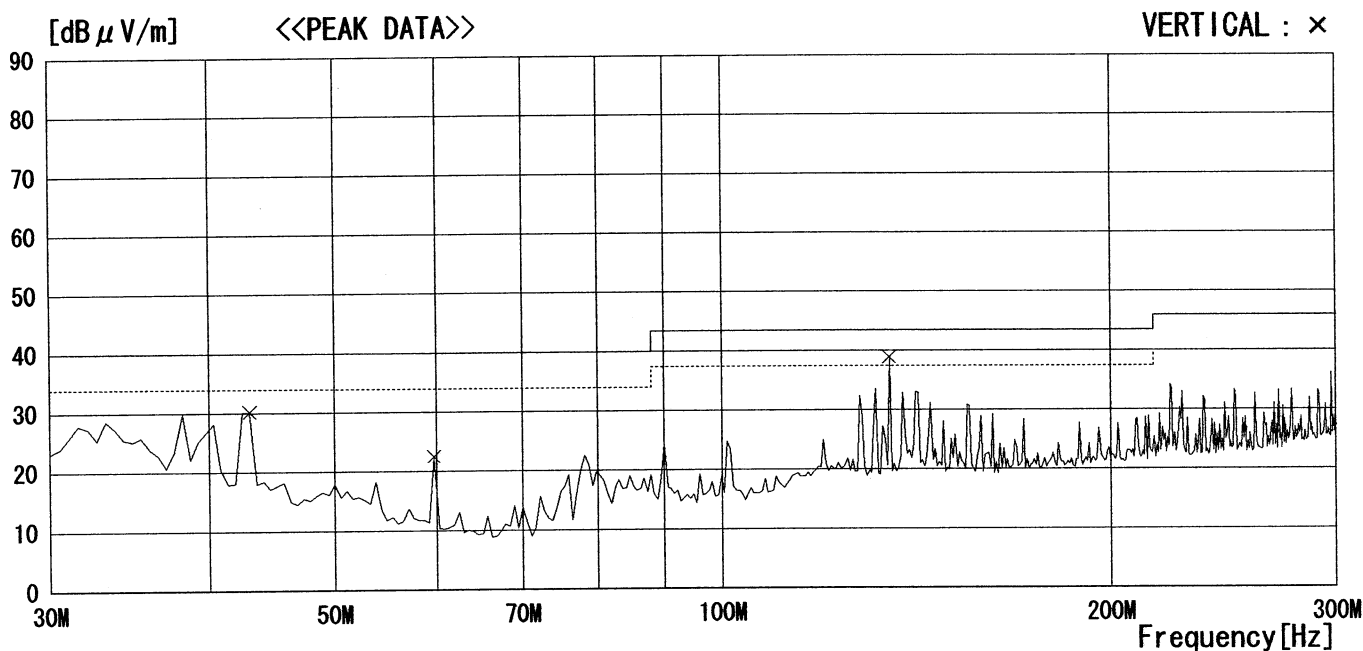
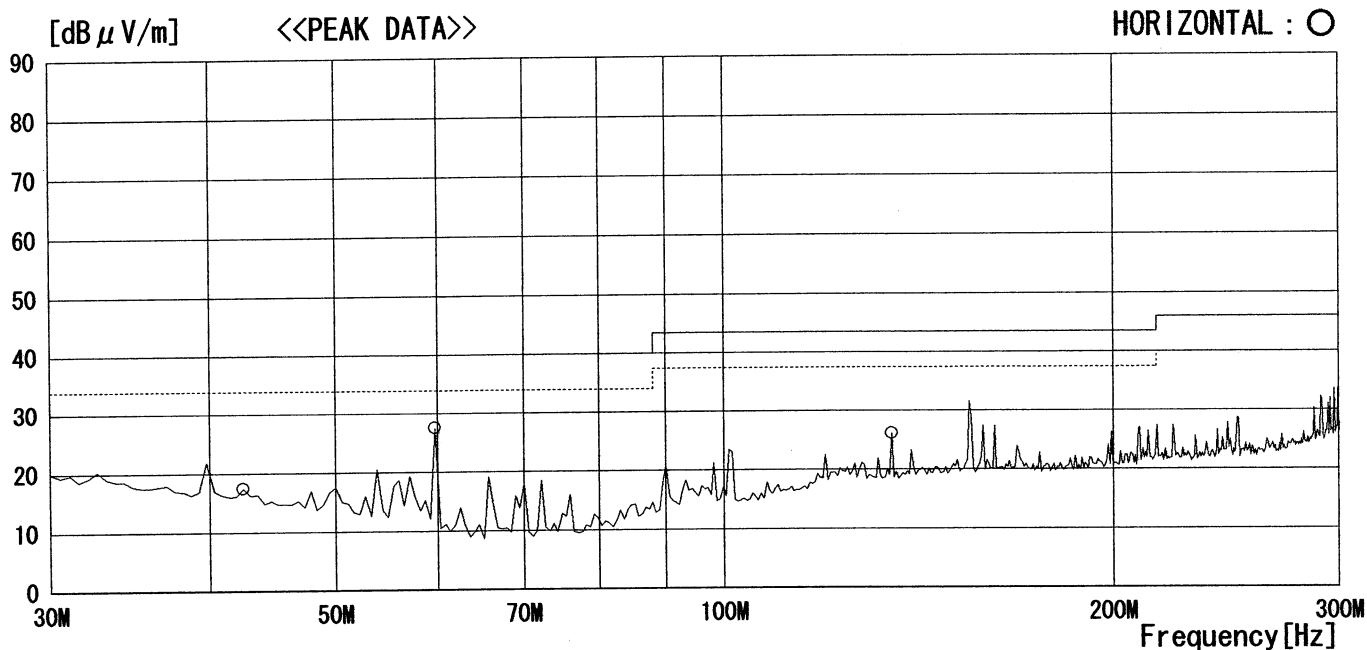


CHART: WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

DATA OF RADIATED EMISSION TEST

A-PEX INTERNATIONAL EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER
Date : 2002/06/04 16:17:43

Applicant : SONY Corporation
Kind of EUT : Digital Video Camera Recorder
Model No. : DCR-IP220
Serial No. : 95

Report No. : 221E0025-H0
Power : AC 120V / 60Hz
Temp°C/Humi% : 26 / 49
Operator : HIROKA UMEYAMA

[Signature]

Mode / Remarks : Tx (2402MHz)

LIMIT : FCC15C § 15.247(c)
MARGIN : 6 dB

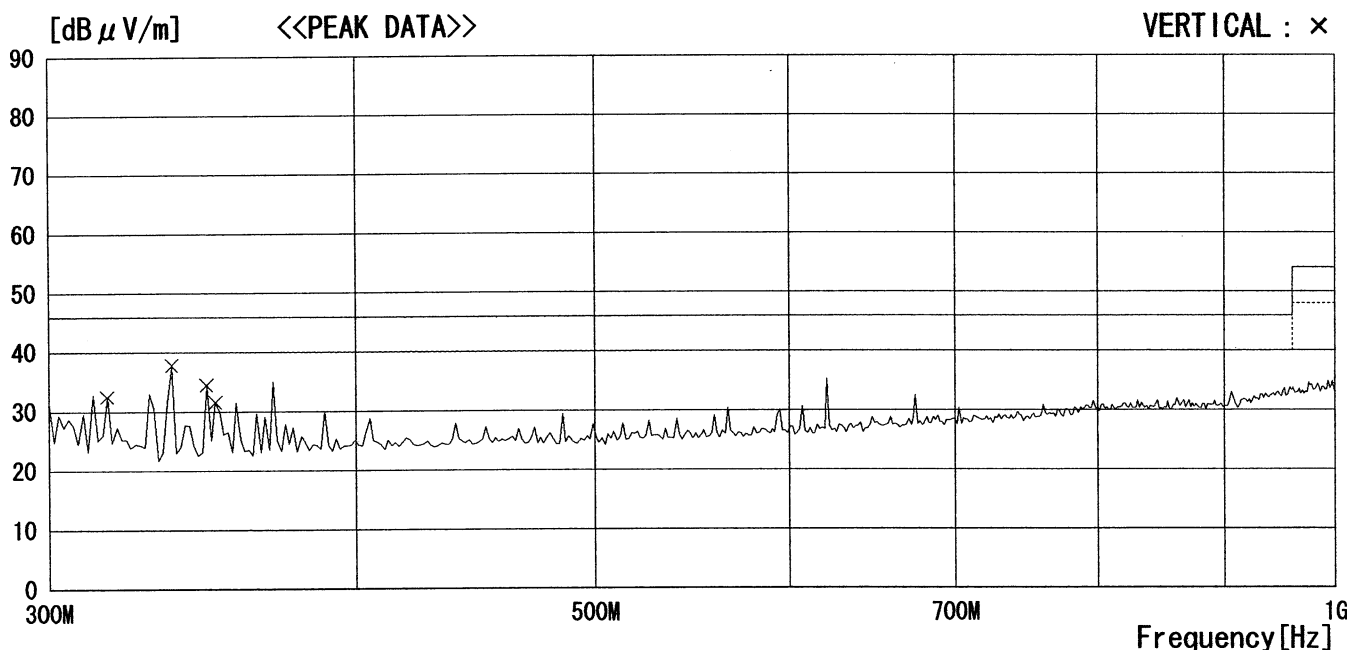
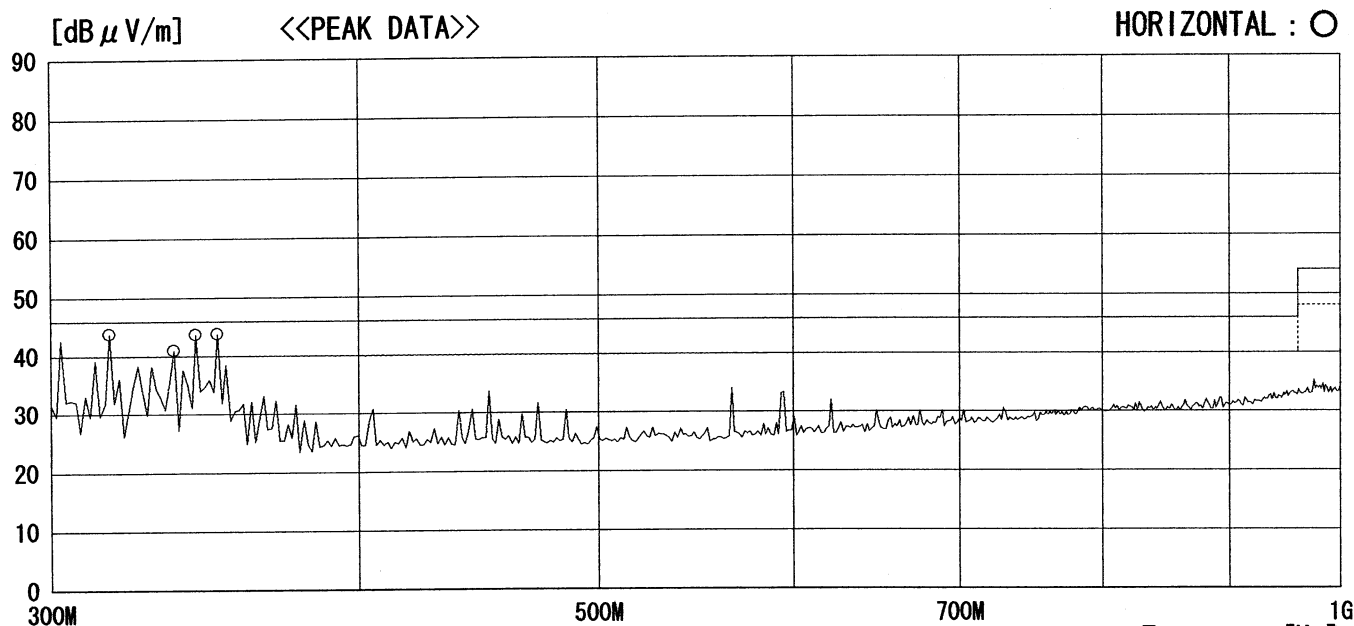


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

DATA OF RADIATED EMISSION TEST

A-PEX INTERNATIONAL EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER
Date : 2002/06/04 14:51:17

Applicant : SONY Corporation
Kind of EUT : Digital Video Camera Recorder
Model No. : DCR-IP220
Serial No. : 95

Report No. : 221E0025-H0
Power : AC 120V / 60Hz
Temp°C/Humi% : 26 / 49
Operator : HIROKA UMEYAMA

Mode / Remarks : Tx (2441MHz)

LIMIT : FCC15C § 15.247(c)
MARGIN : 6 dB

> *[Signature]*

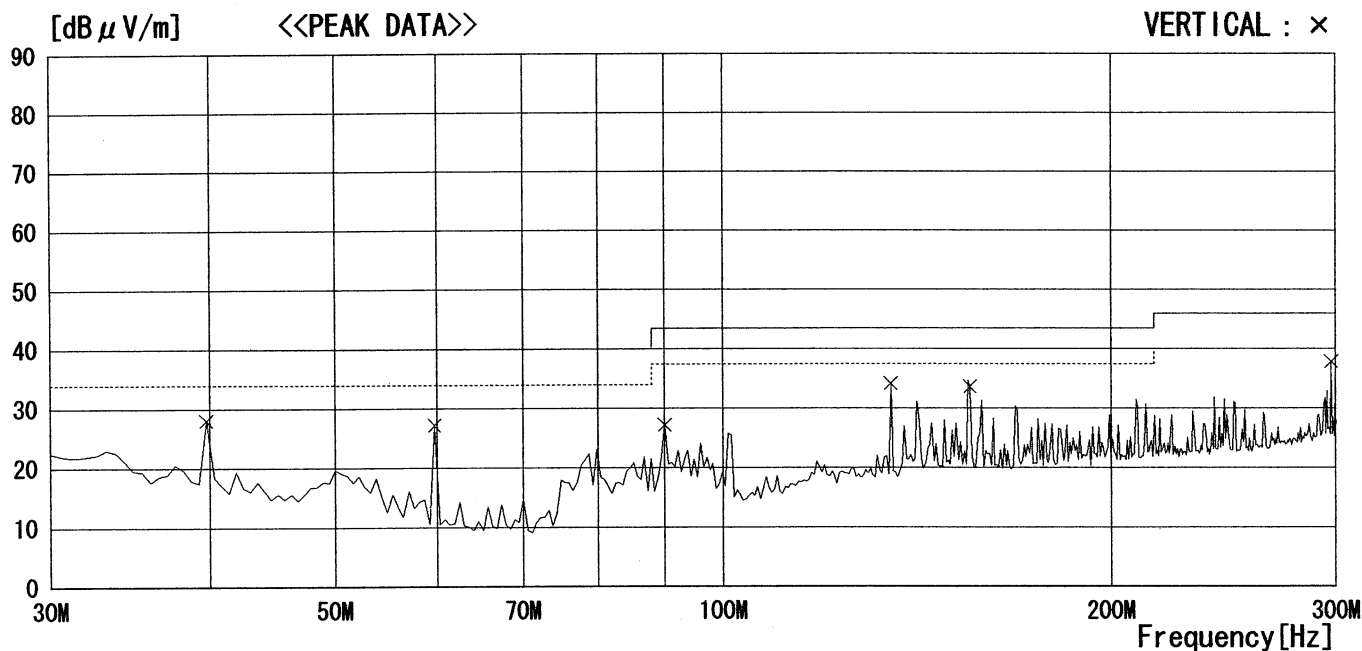
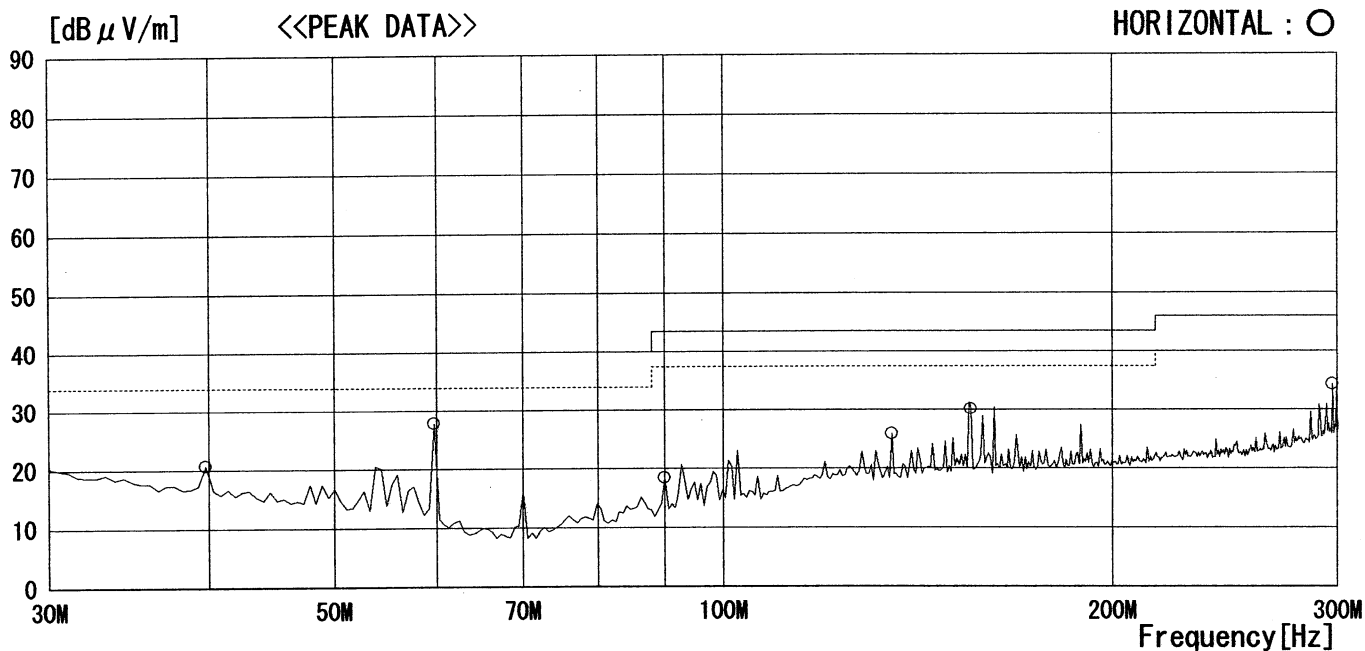


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

DATA OF RADIATED EMISSION TEST

A-PEX INTERNATIONAL EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER

Date : 2002/06/04 15:50:14

Applicant : SONY Corporation
Kind of EUT : Digital Video Camera Recorder
Model No. : DCR-IP220
Serial No. : 95

Report No. : 22IE0025-H0
Power : AC 120V / 60Hz
Temp°C/Humi% : 26 / 49
Operator : HIROKA UMEYAMA

Mode / Remarks : Tx(2441MHz)

LIMIT : FCC15C § 15.247(c)
MARGIN : 6 dB

S. UmeYama

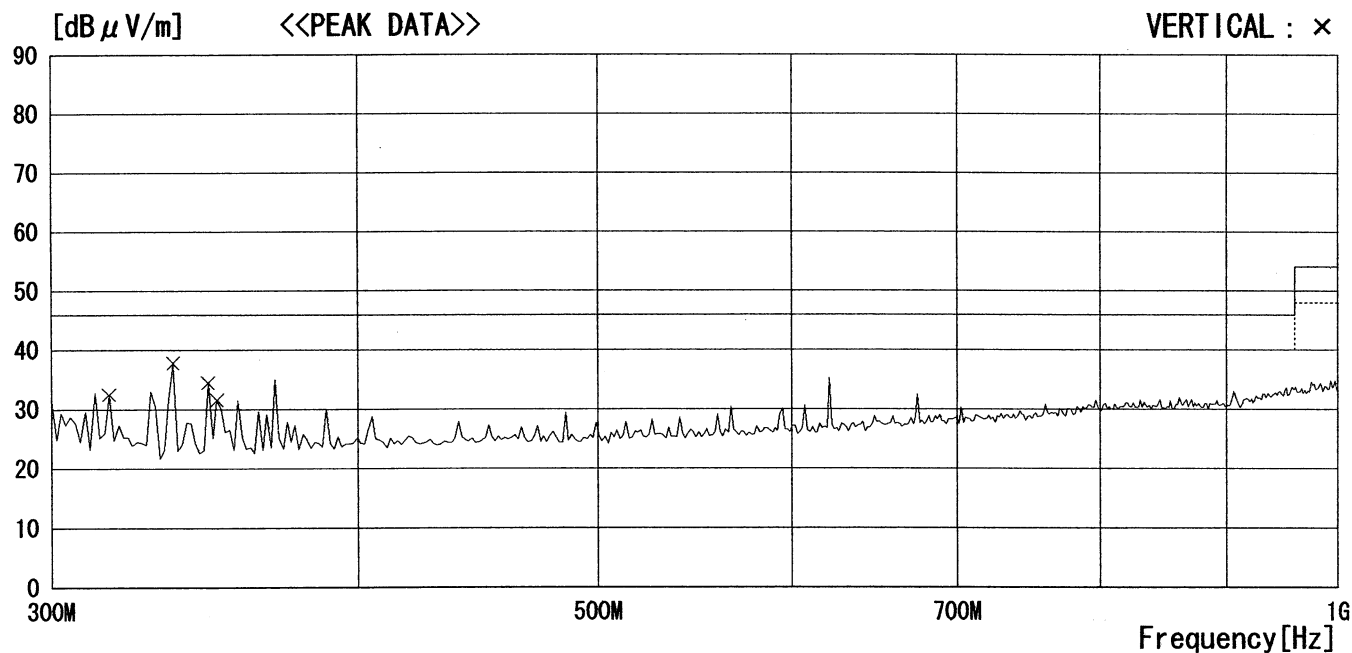
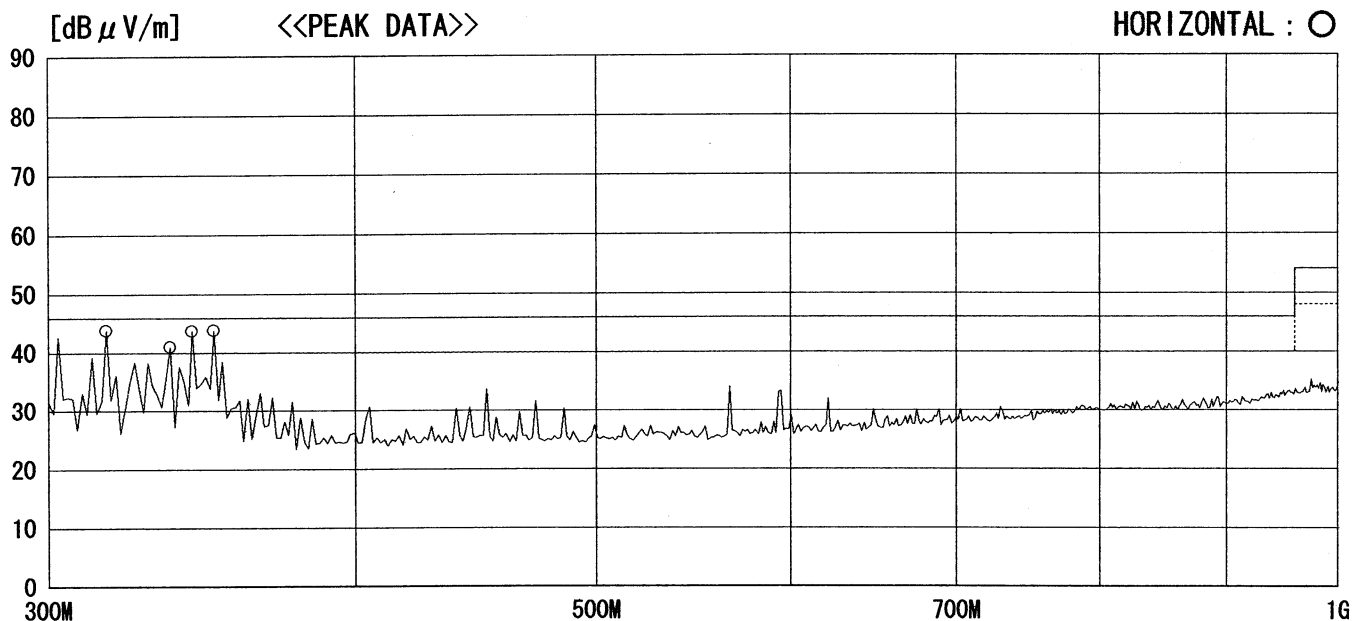


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

DATA OF RADIATED EMISSION TEST

A-PEX INTERNATIONAL EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER
Date : 2002/06/05 10:44:44

Applicant : SONY Corporation
Kind of EUT : Digital Video Camera Recorder
Model No. : DCR-IP220
Serial No. : 95

Report No. : 221E0025-H0
Power : AC 120V / 60Hz
Temp°C/Humi% : 26 / 49
Operator : HIROKA UMEYAMA

Mode / Remarks : Tx (2480MHz)

LIMIT : FCC15C § 15.247(c)
MARGIN : 6 dB

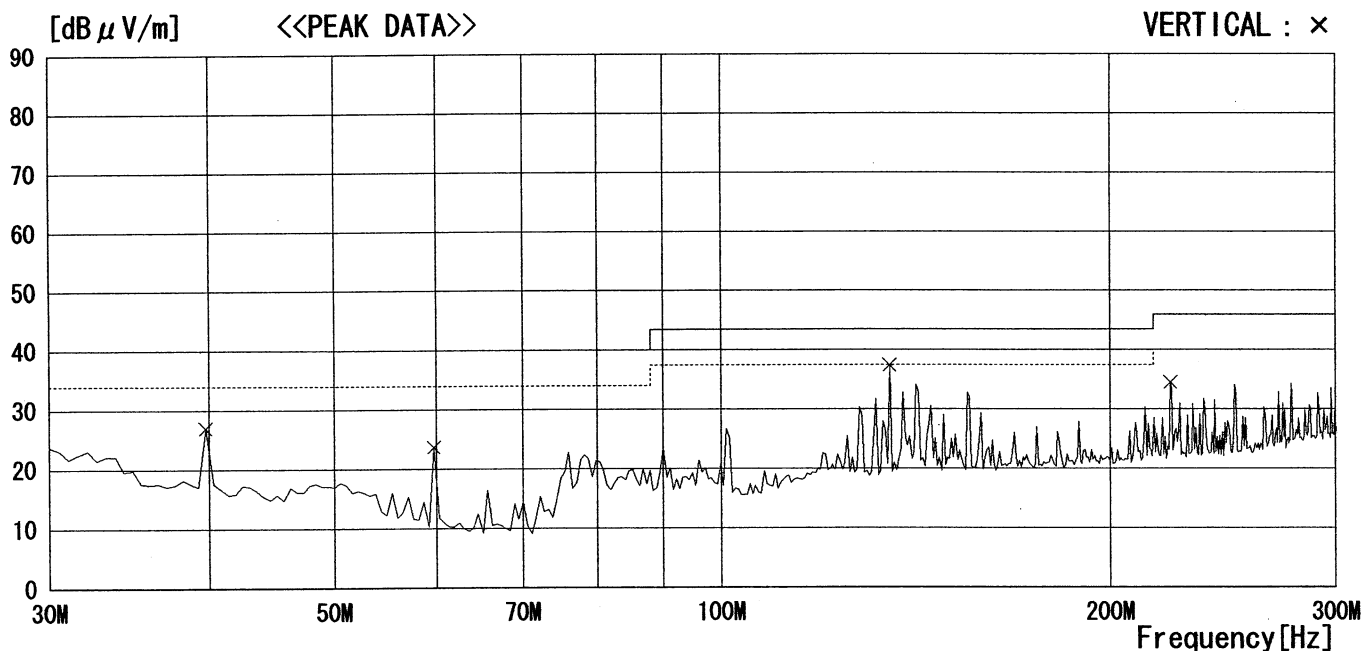
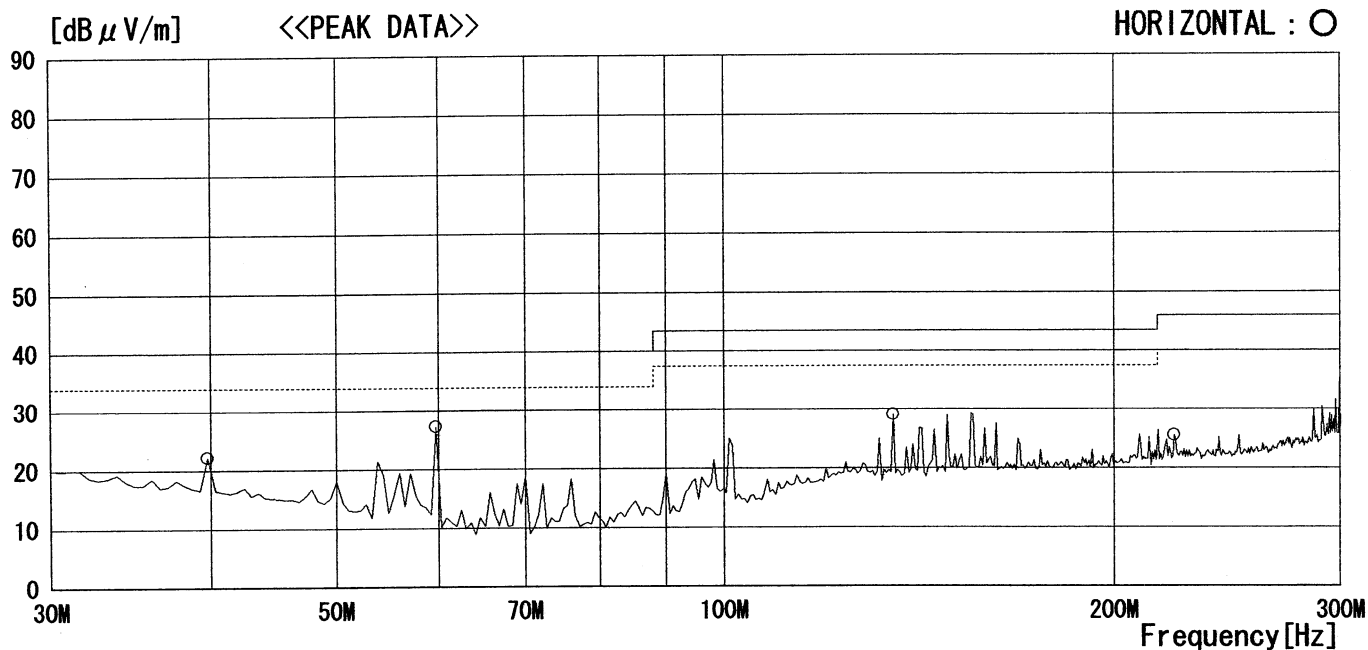


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - AMP. GAIN

DATA OF RADIATED EMISSION TEST

A-PEX INTERNATIONAL EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER
Date : 2002/06/05 11:07:28

Applicant : SONY Corporation
Kind of EUT : Digital Video Camera Recorder
Model No. : DCR-IP220
Serial No. : 95

Report No. : 221E0025-H0
Power : AC 120V / 60Hz
Temp°C/Humi% : 26 / 49
Operator : HIROKA UMEYAMA

Mode / Remarks : Tx(2480MHz)

LIMIT : FCC15C §15.247(c)
MARGIN : 6 dB

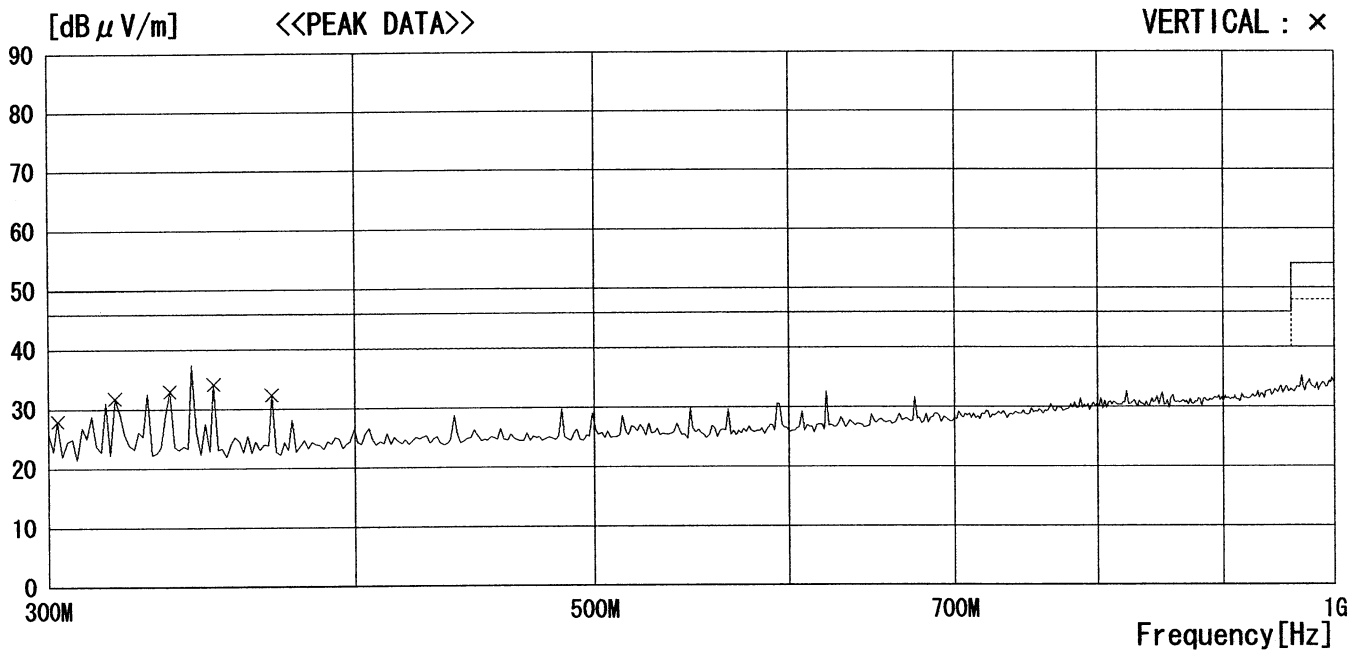
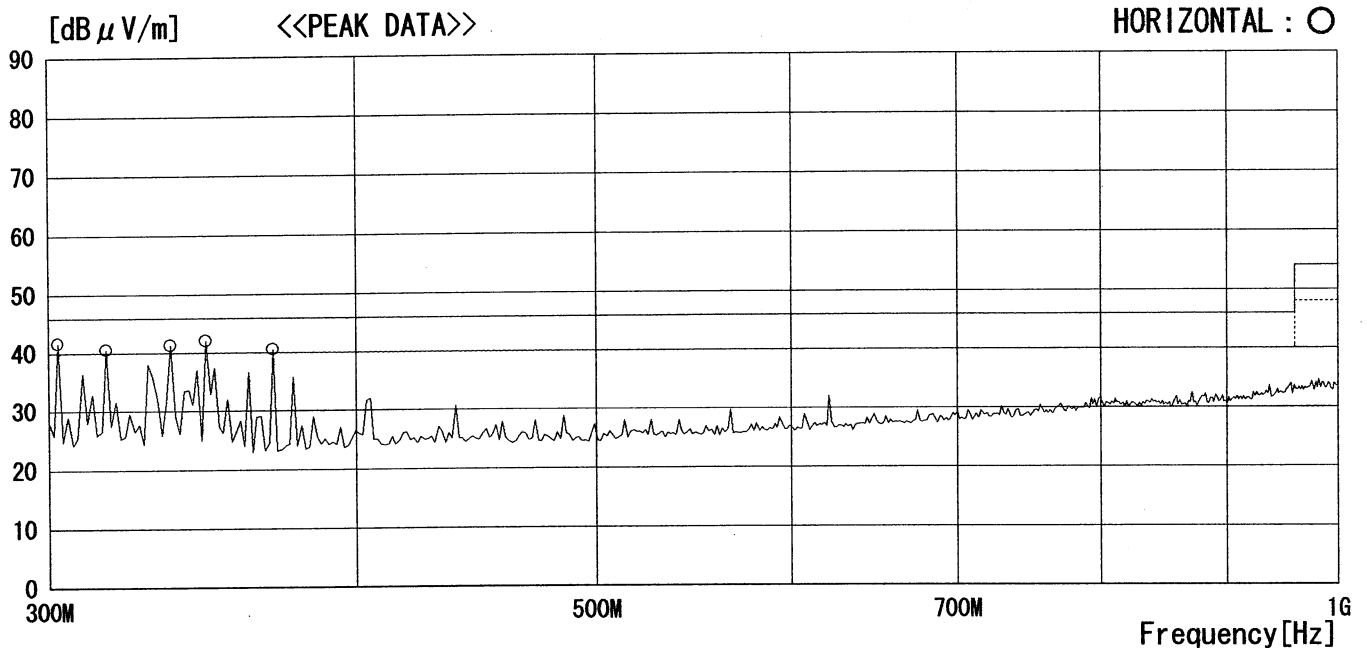
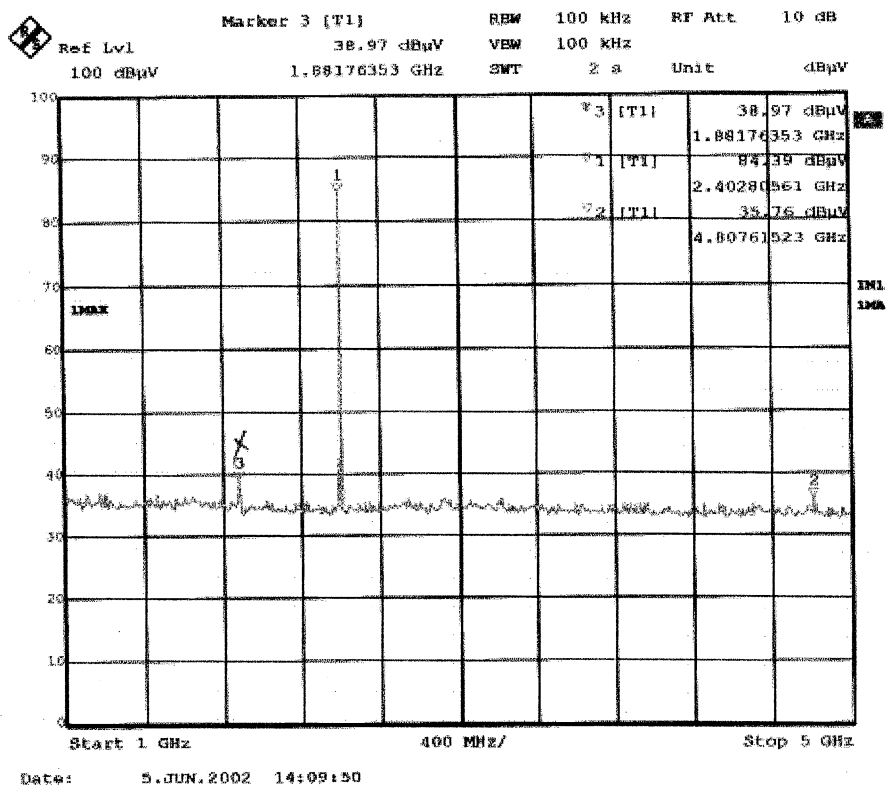
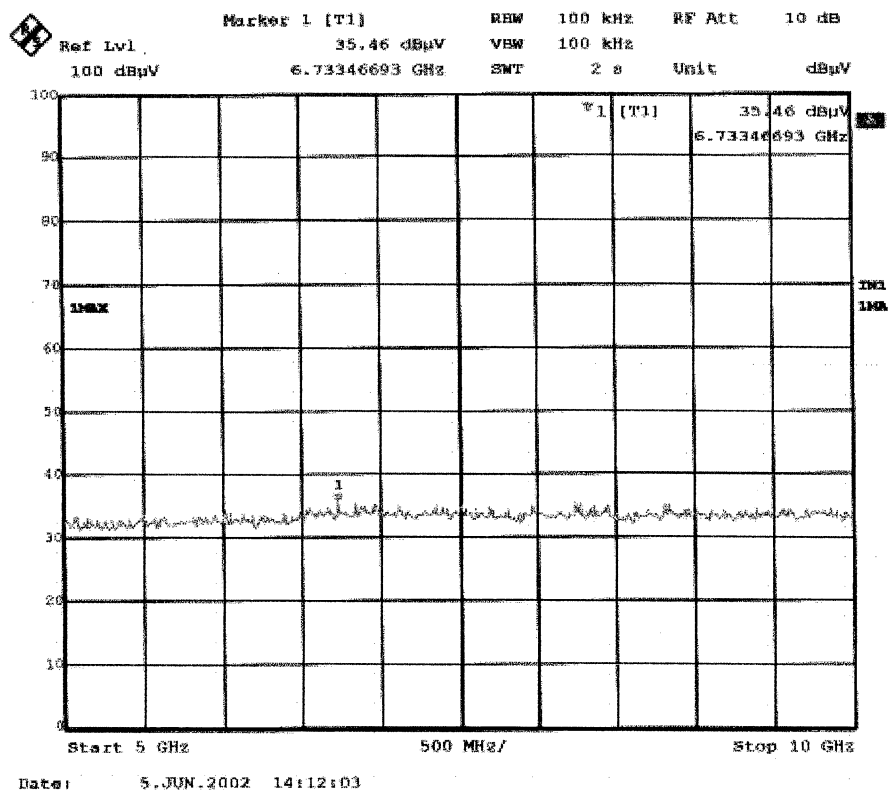


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

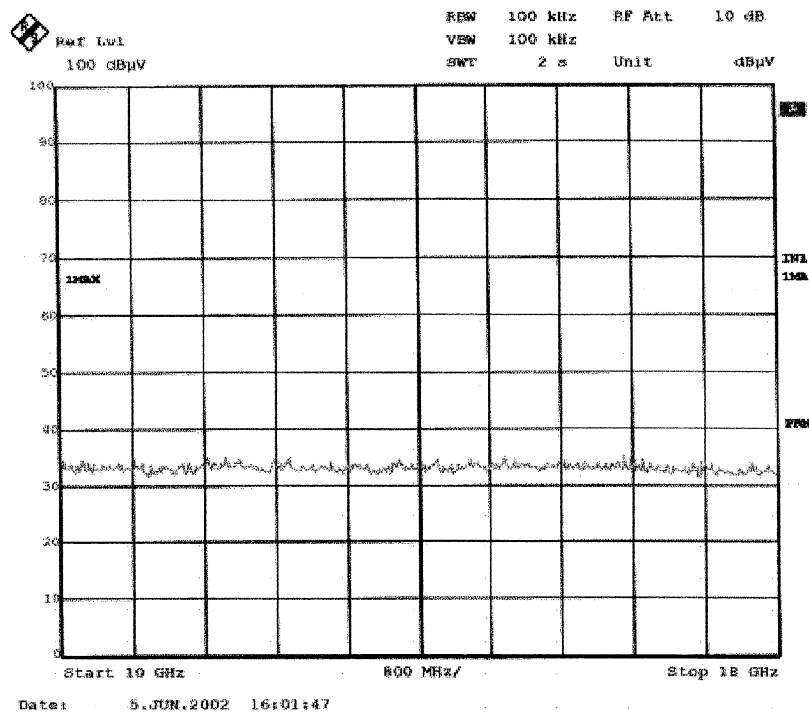
Spurious Emission(Radiated) :Tx(2402MHz) HOR 3m



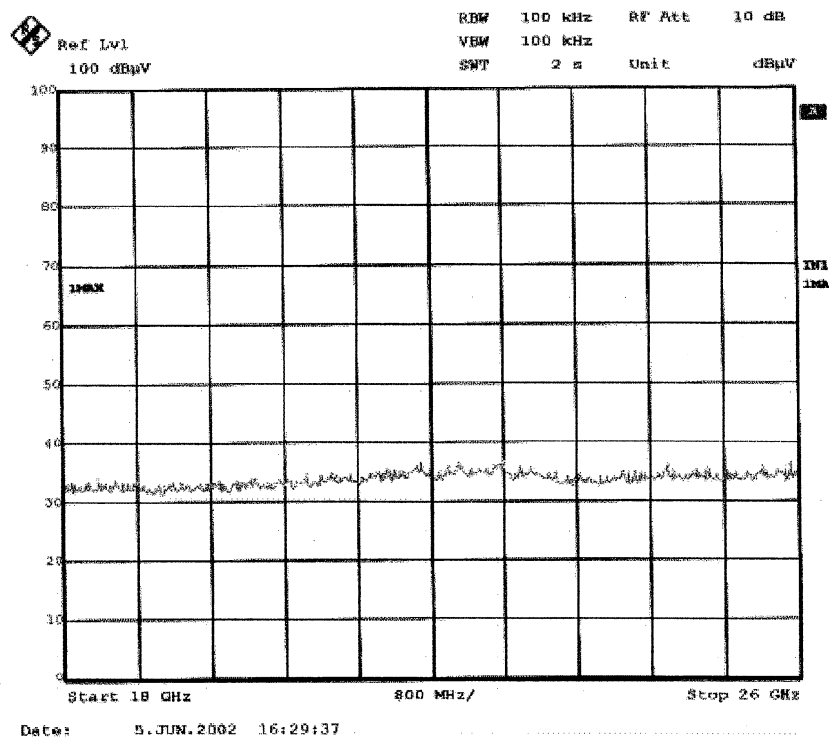
Spurious Emission(Radiated) :Tx(2402MHz) HOR 3m



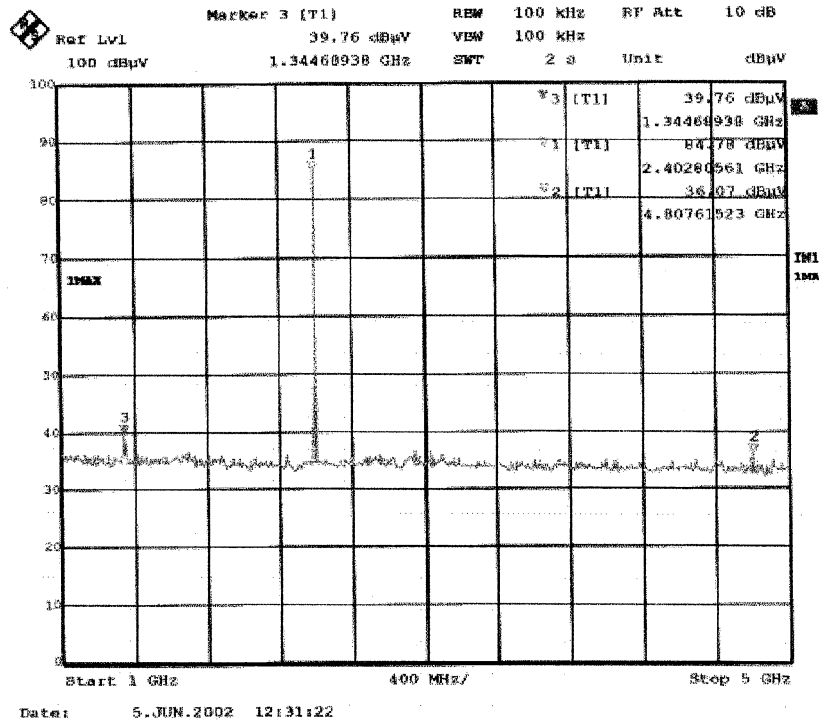
Spurious Emission(Radiated) :Tx(2402MHz) HOR 1m



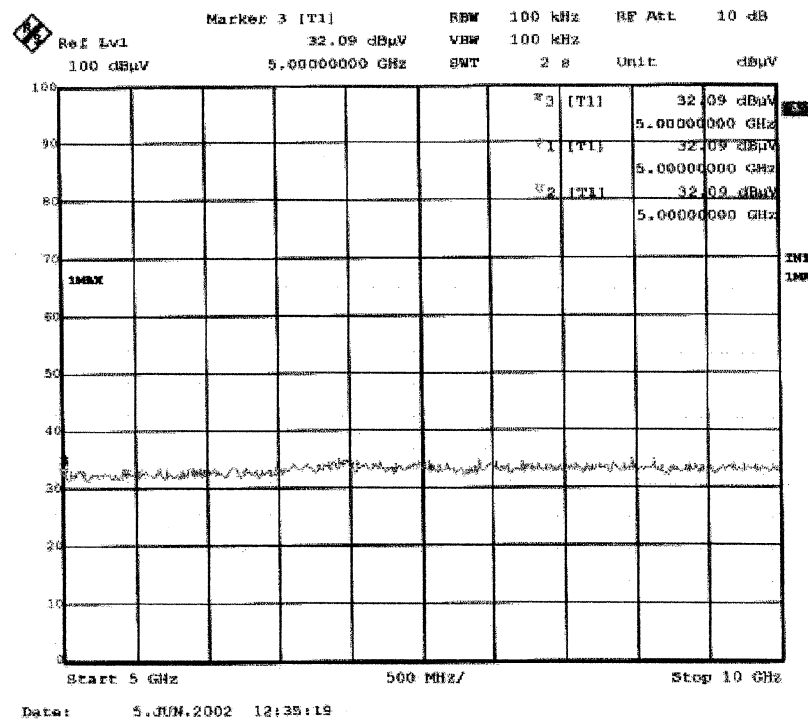
Spurious Emission(Radiated) :Tx(2402MHz) HOR 1m

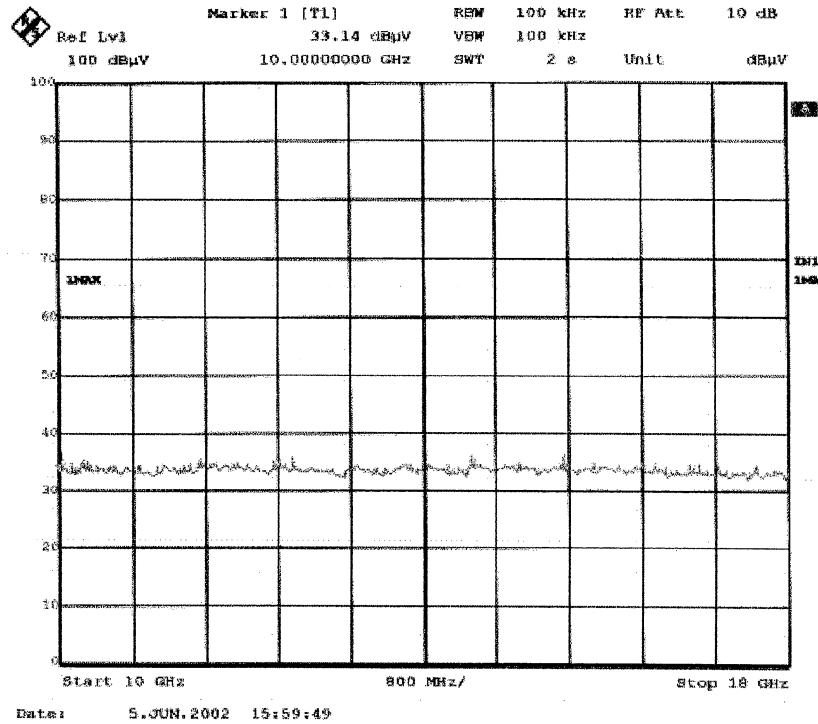
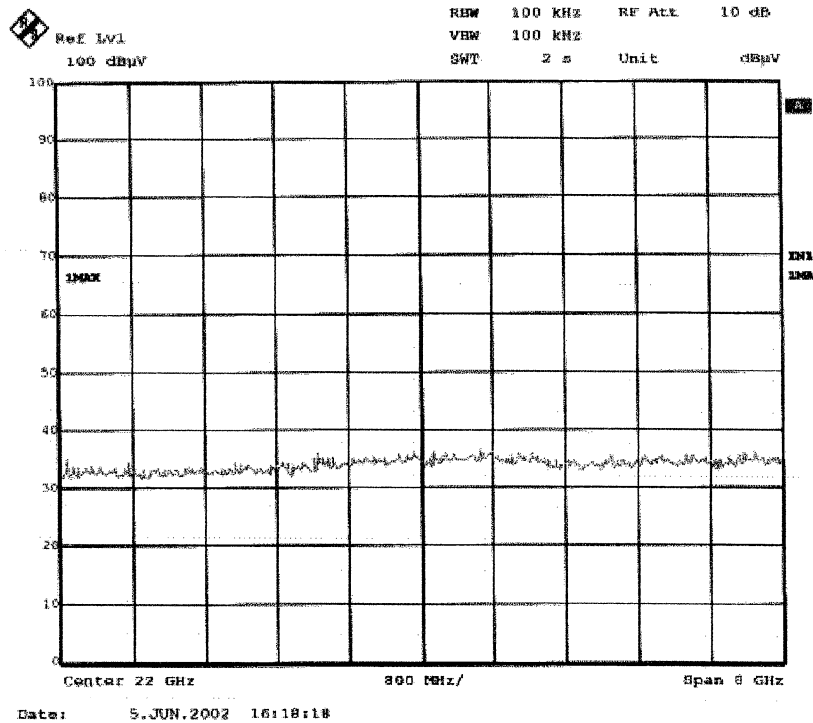


Spurious Emission(Radiated) :Tx(2402MHz) VER 3m

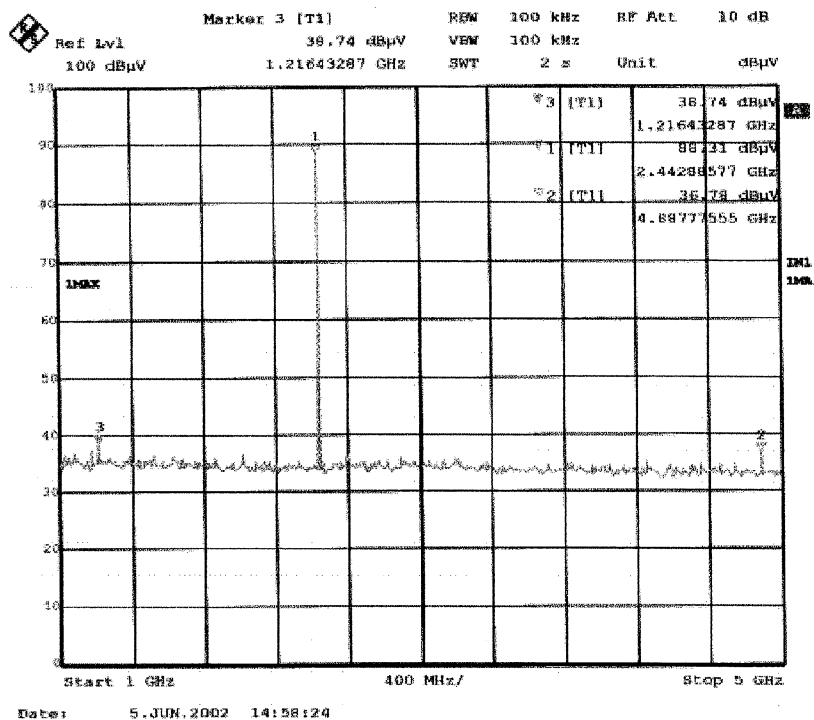


Spurious Emission(Radiated) :Tx(2402MHz) VER 3m

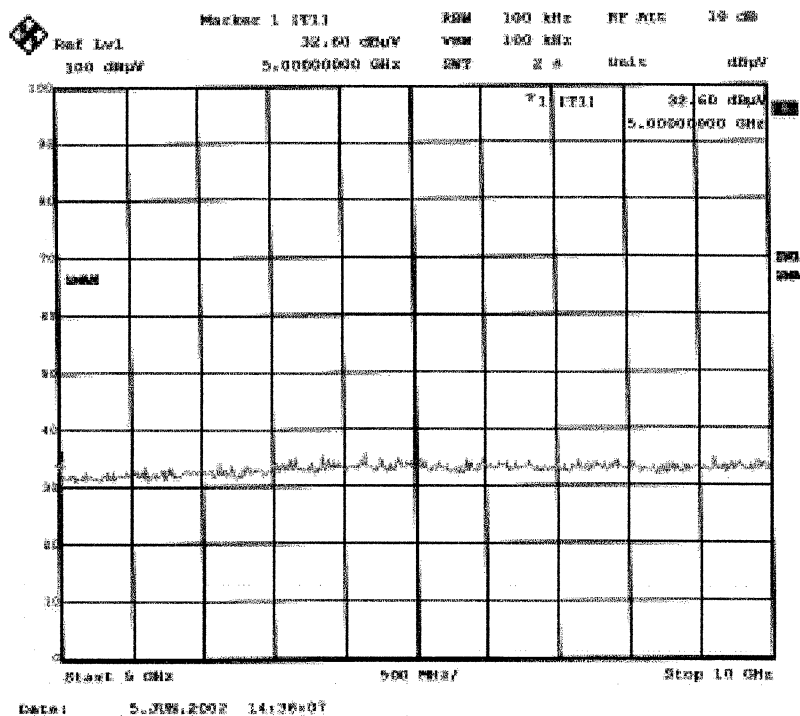


Spurious Emission(Radiated) :Tx(2402MHz) VER 1m**Spurious Emission(Radiated) : Tx(2402MHz) VER 1m**

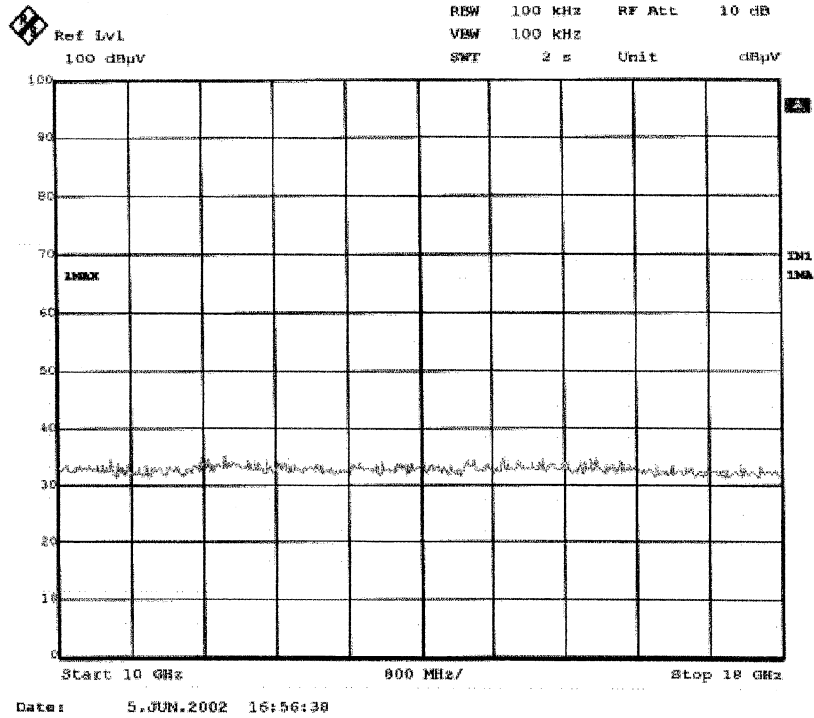
Spurious Emission(Radiated) :Tx(2441MHz) HOR 3m



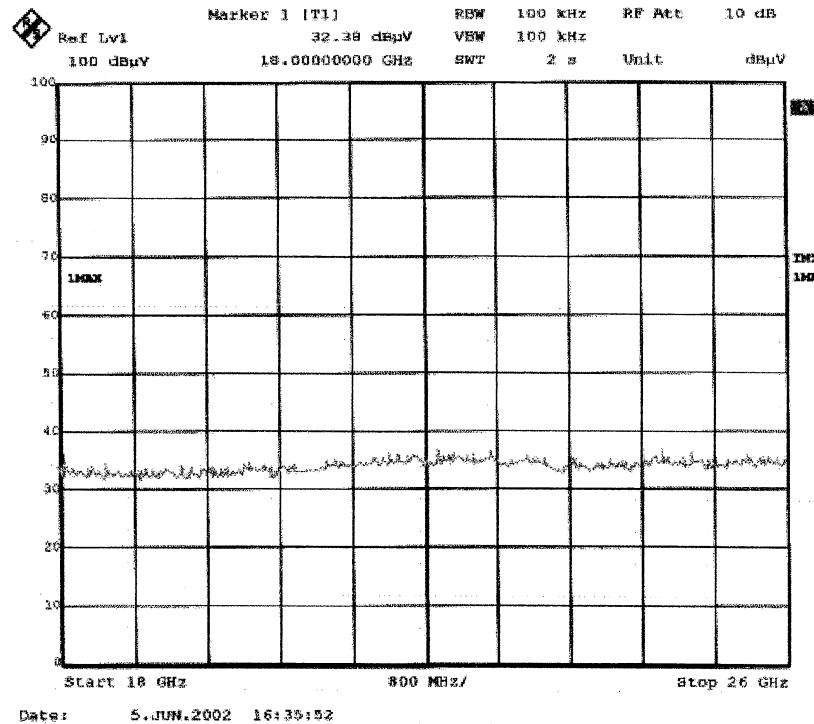
Spurious Emission(Radiated) :Tx(2441MHz) HOR 3m



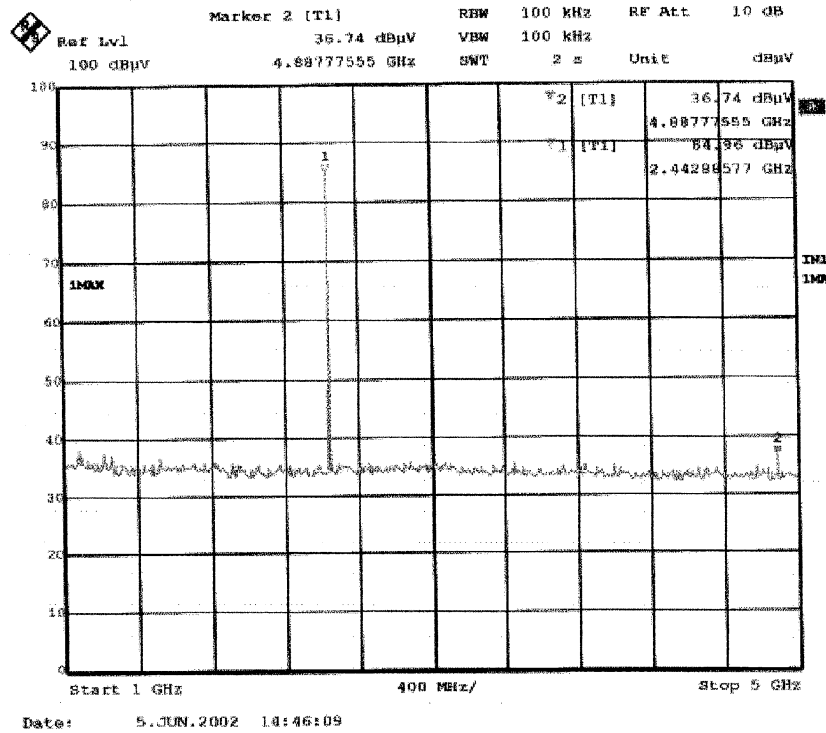
Spurious Emission(Radiated) :Tx(2441MHz) HOR 1m



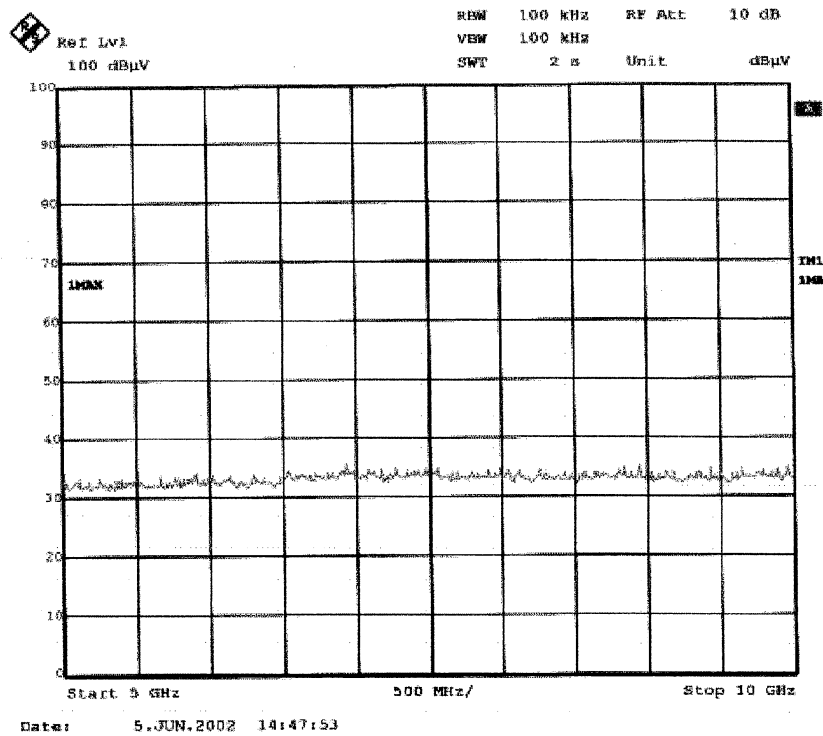
Spurious Emission(Radiated) :Tx(2441MHz) HOR 1m



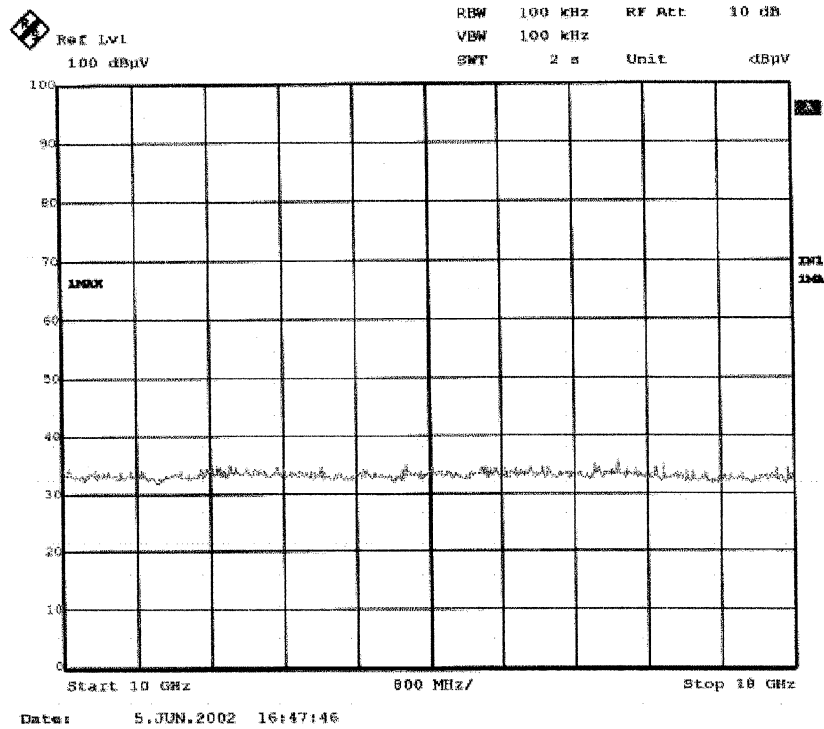
Spurious Emission(Radiated) :Tx(2441MHz) VER 3m



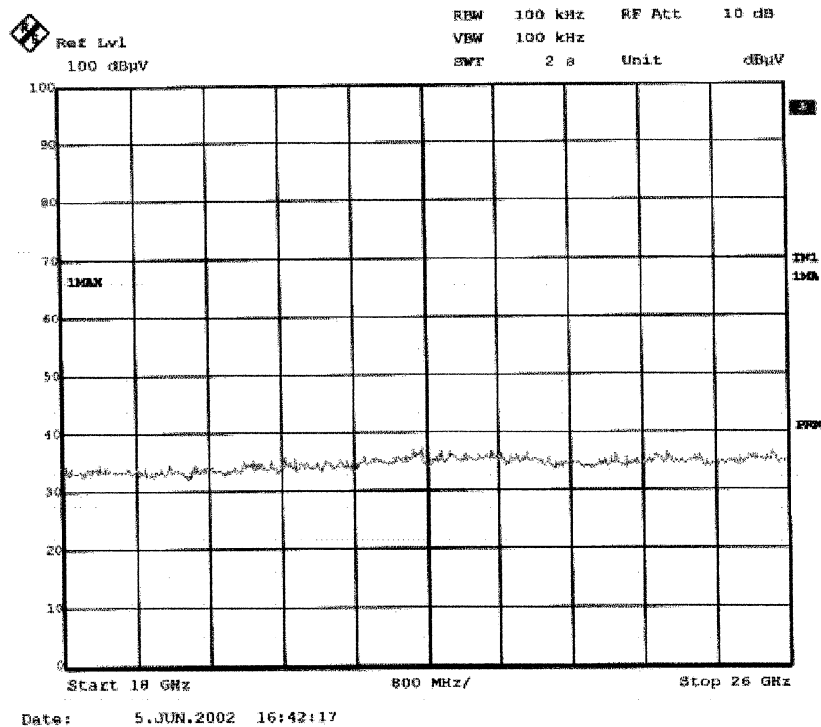
Spurious Emission(Radiated) :Tx(2441MHz) VER 3m



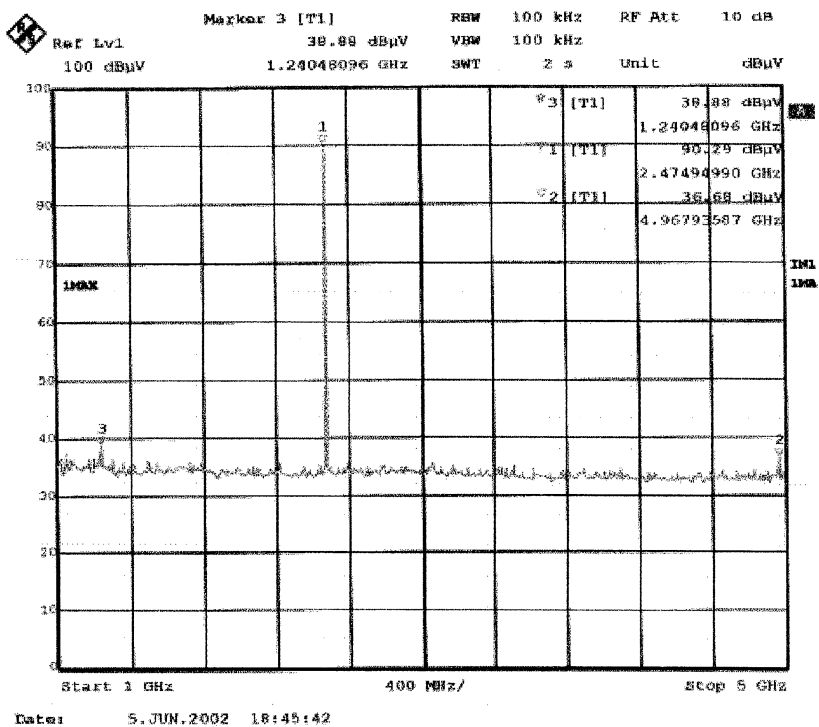
Spurious Emission(Radiated) :Tx(2441MHz) VER 1m



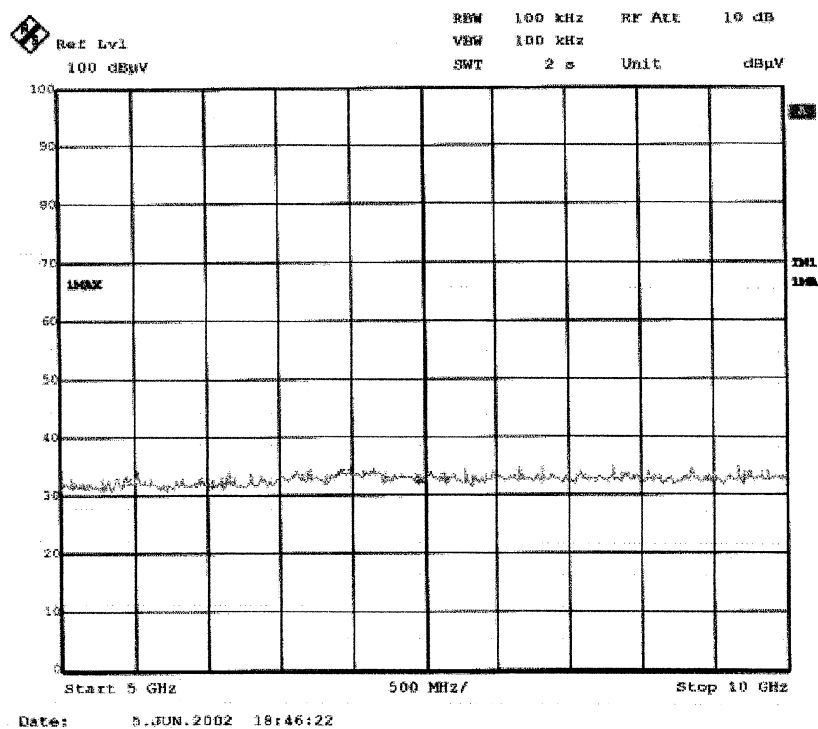
Spurious Emission(Radiated) :Tx(2441MHz) VER 1m



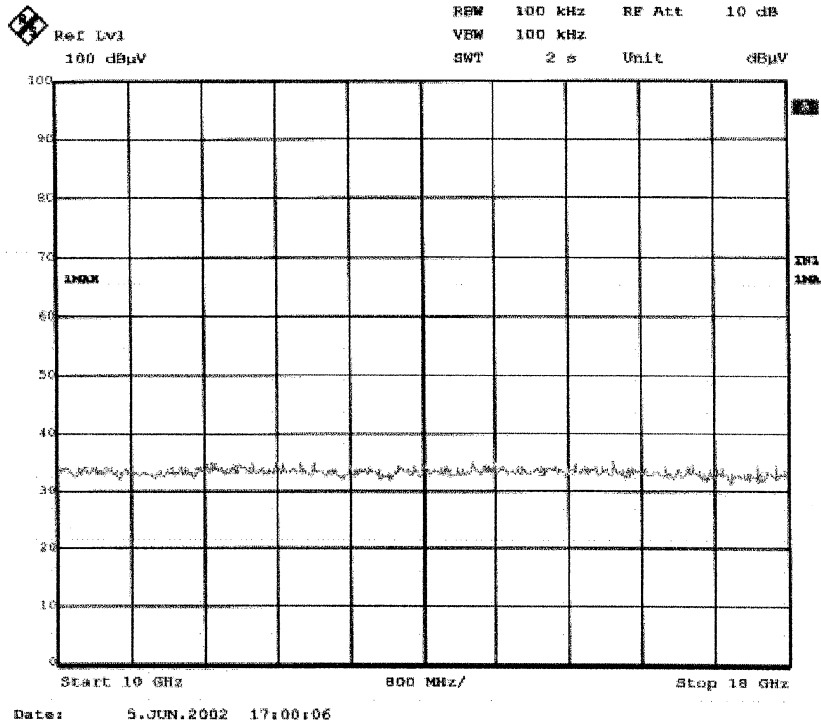
Spurious Emission(Radiated) :Tx(2480MHz) HOR 3m



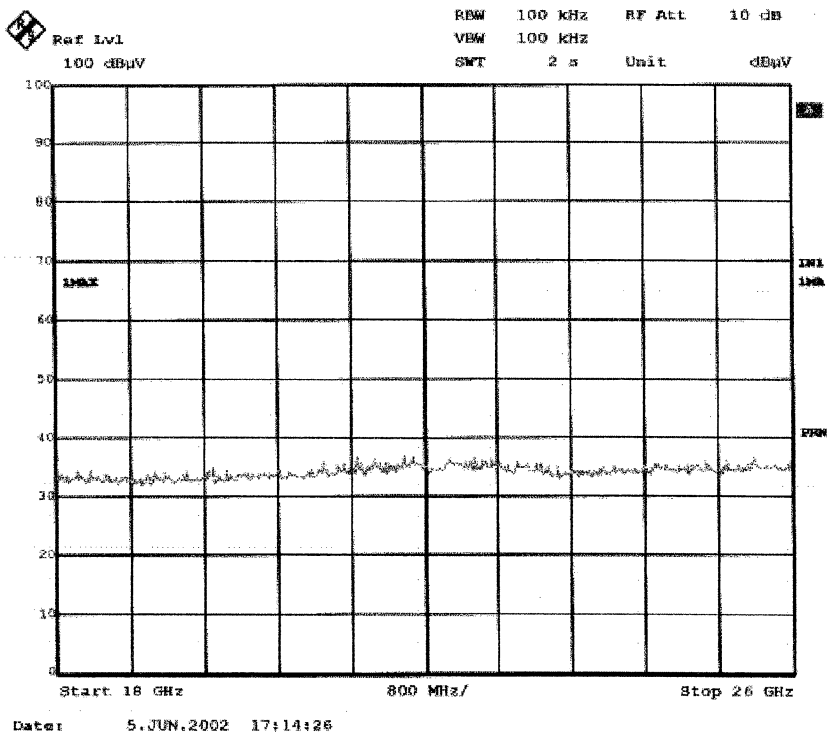
Spurious Emission(Radiated) :Tx(2480MHz) HOR 3m



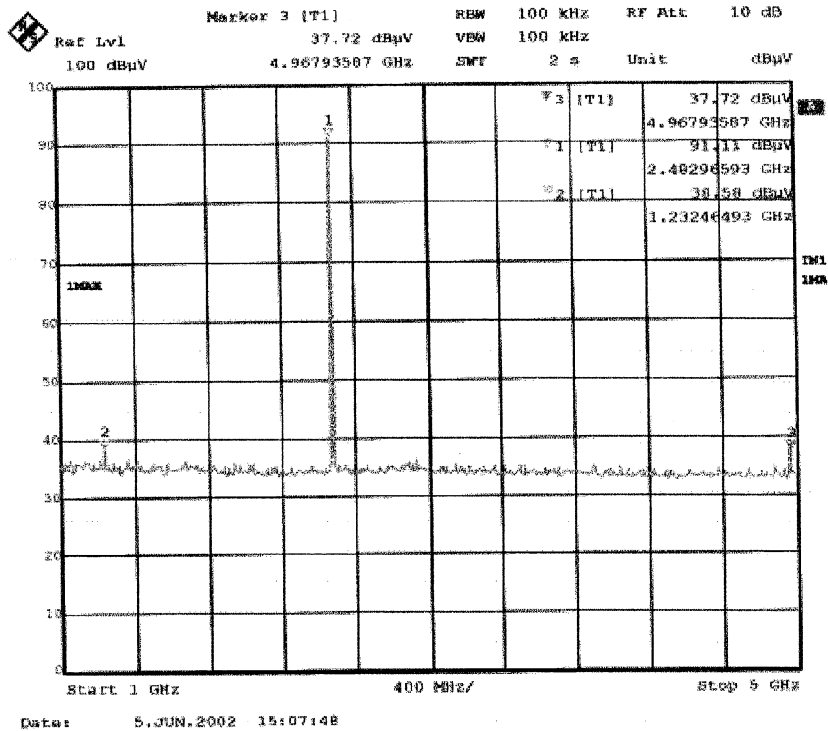
Spurious Emission(Radiated) :Tx(2480MHz) HOR 1m



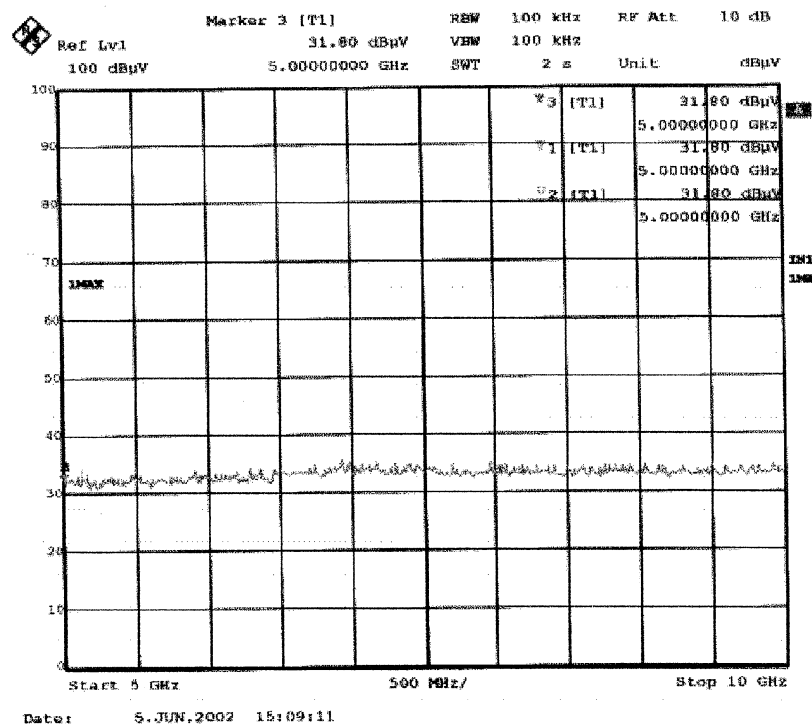
Spurious Emission(Radiated) :Tx(2480MHz) HOR 1m

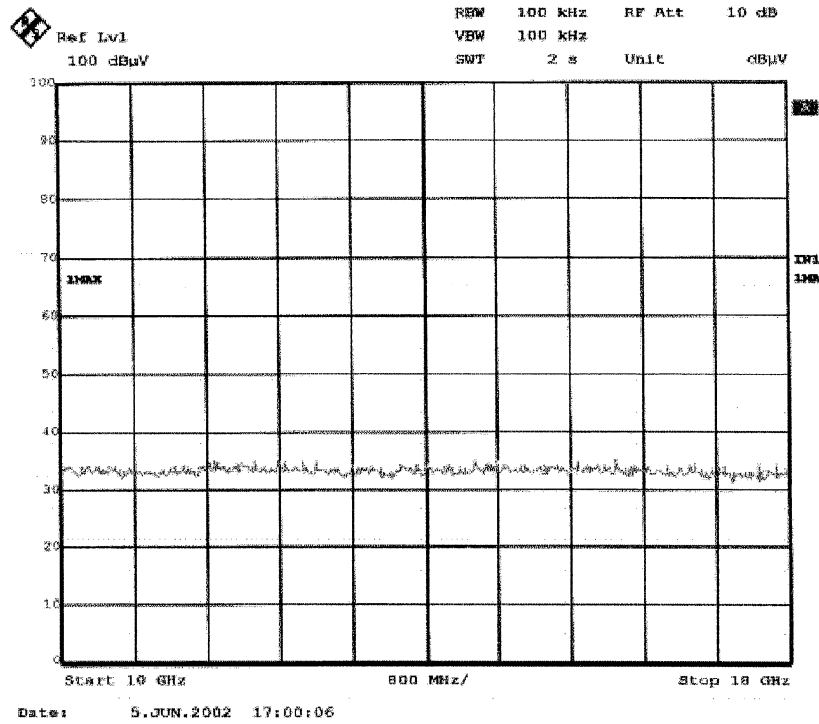
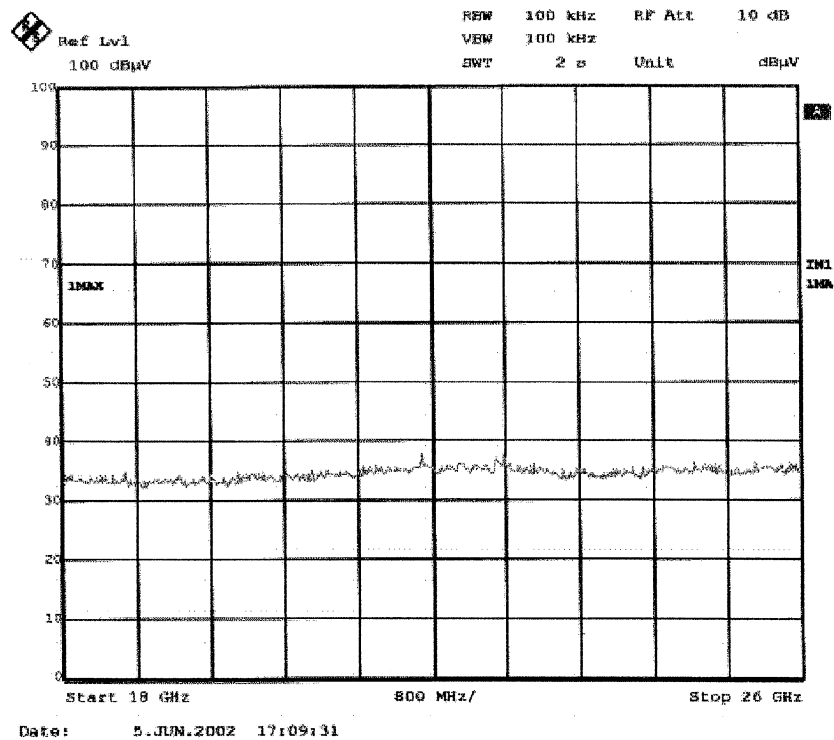


Spurious Emission(Radiated) :Tx(2480MHz) VER 3m

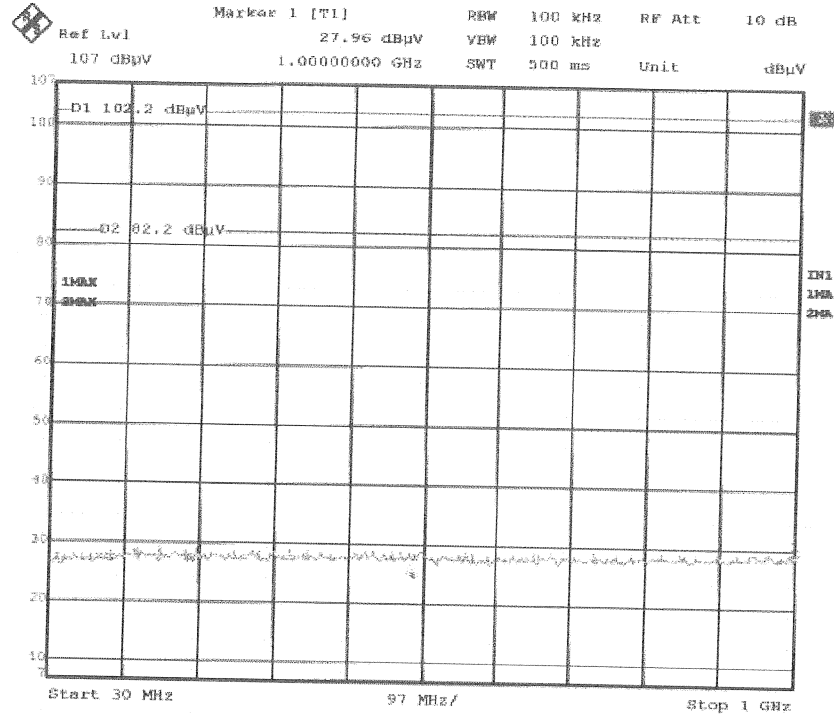


Spurious Emission(Radiated) :Tx(2480MHz) VER 3m



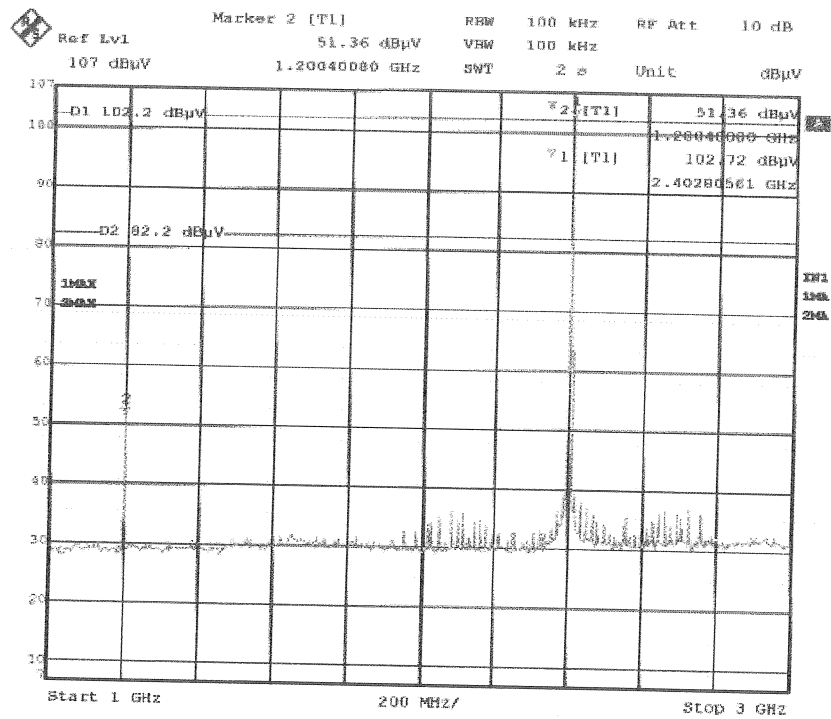
Spurious Emission(Radiated) :Tx(2480MHz) VER 1m**Spurious Emission(Radiated) :Tx(2480MHz) VER 1m**

Spurious Emission(Conducted) :Tx(2402MHz)



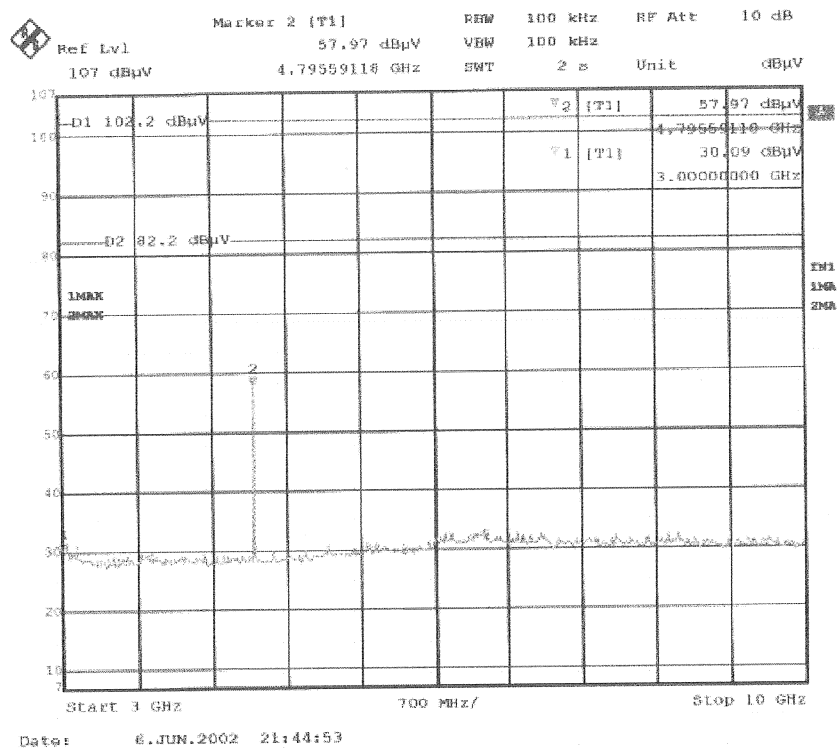
Date: 6.JUN.2002 21:47:33

Spurious Emission(Conducted) :Tx(2402MHz)

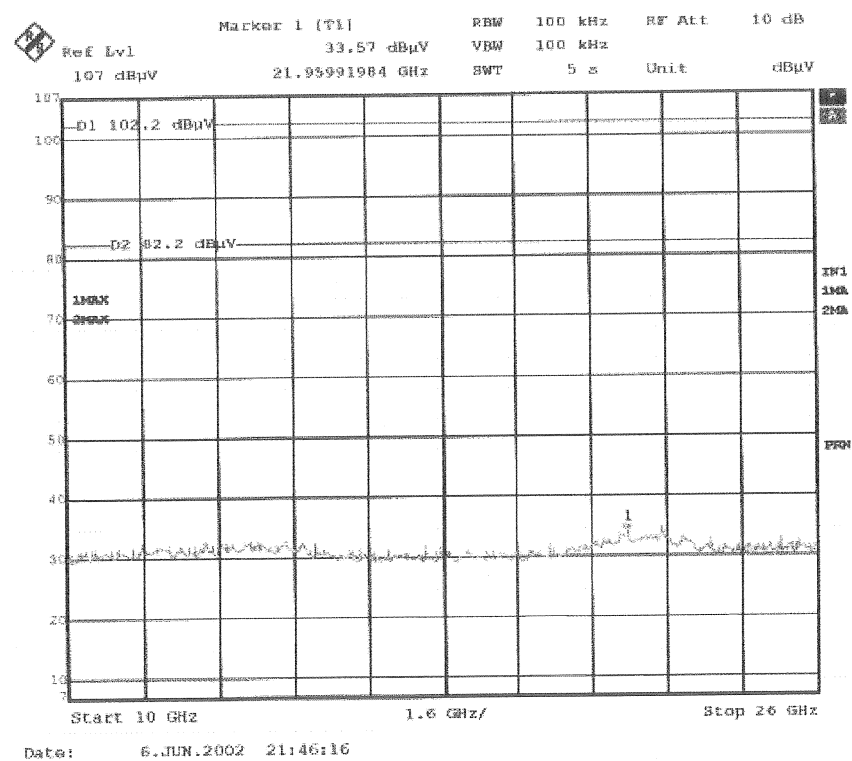


Date: 6.JUN.2002 21:41:02

Spurious Emission(Conducted) :Tx(2402MHz)

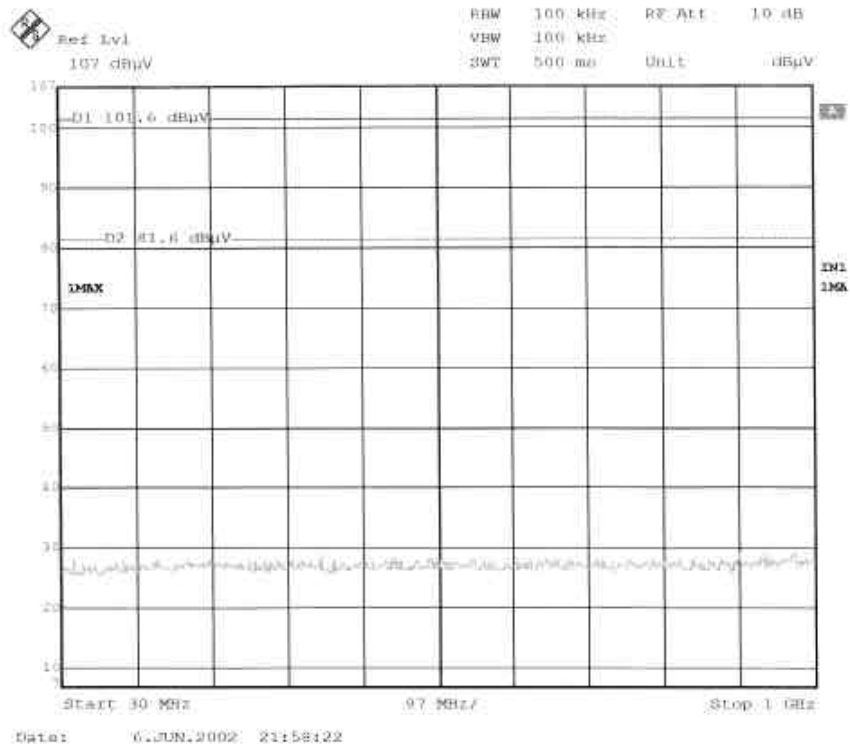


Spurious Emission(Conducted) :Tx(2402MHz)

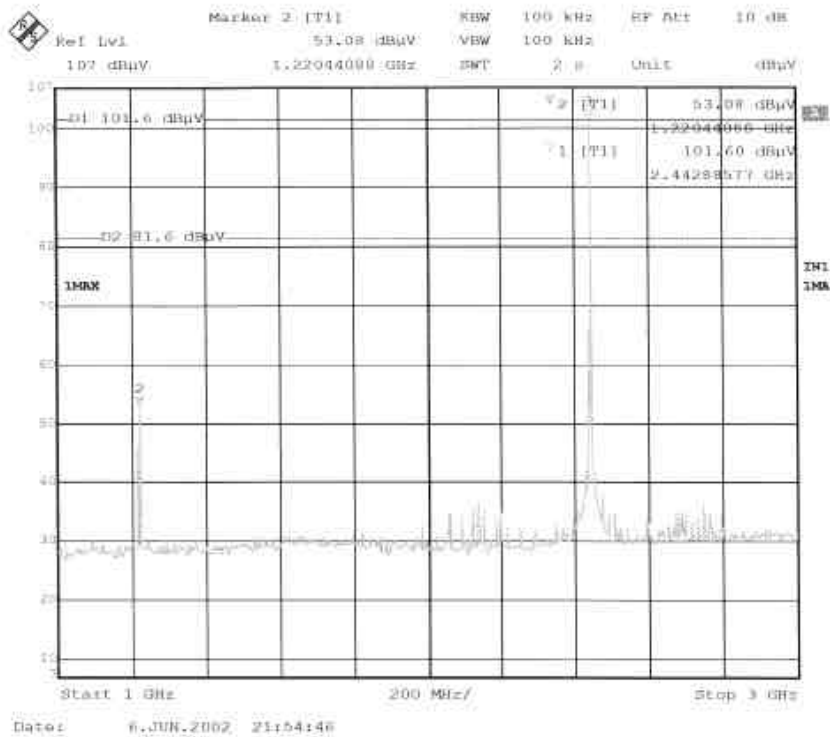


Spurious Emission(Conducted) :Tx(2441MHz)

78

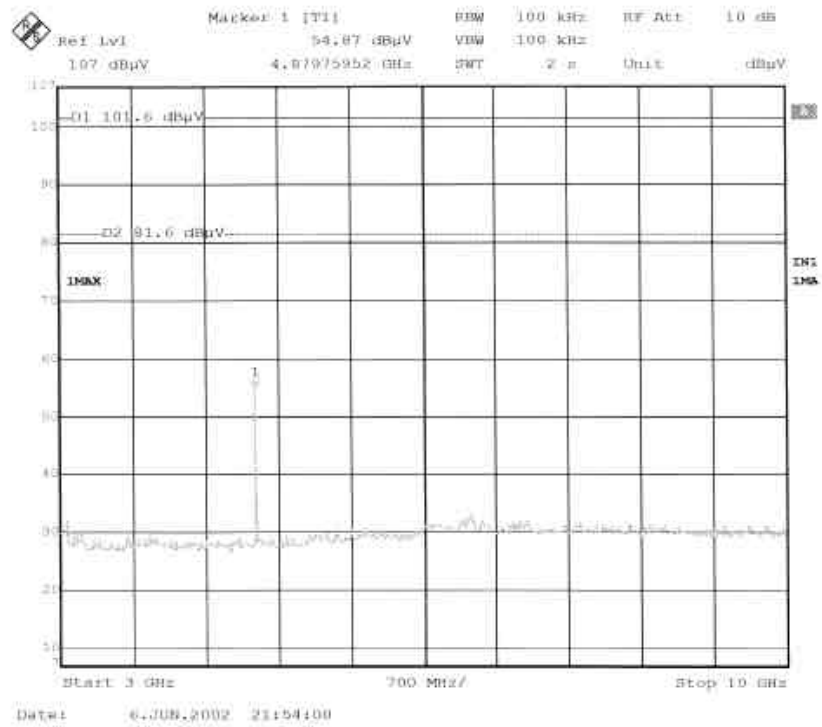


Spurious Emission(Conducted) :Tx(2441MHz)

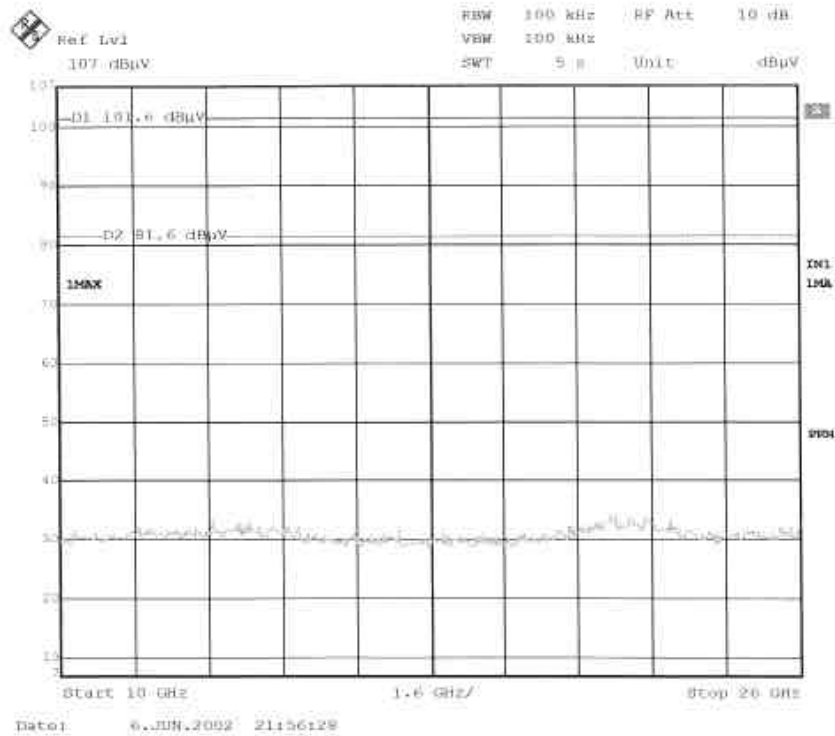


Spurious Emission(Conducted) :Tx(2441MHz)

79

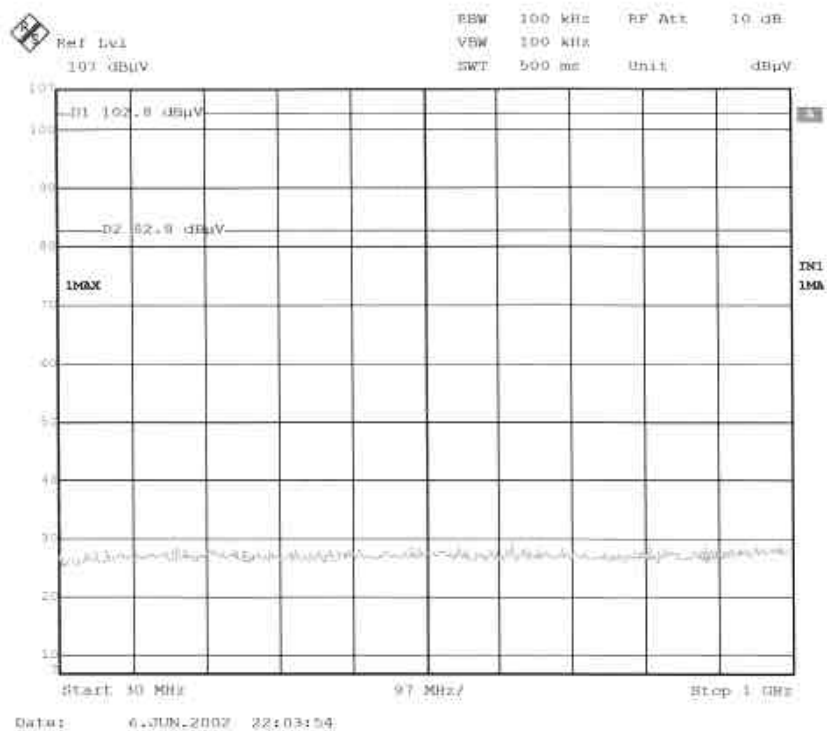


Spurious Emission(Conducted) :Tx(2441MHz)

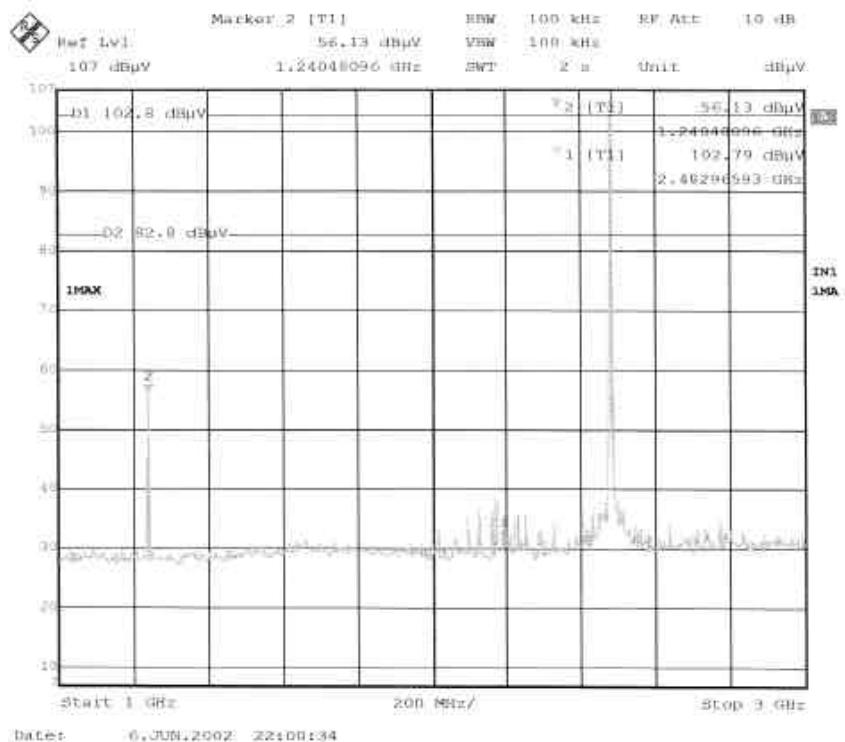


Spurious Emission(Conducted) :Tx(2480MHz)

80

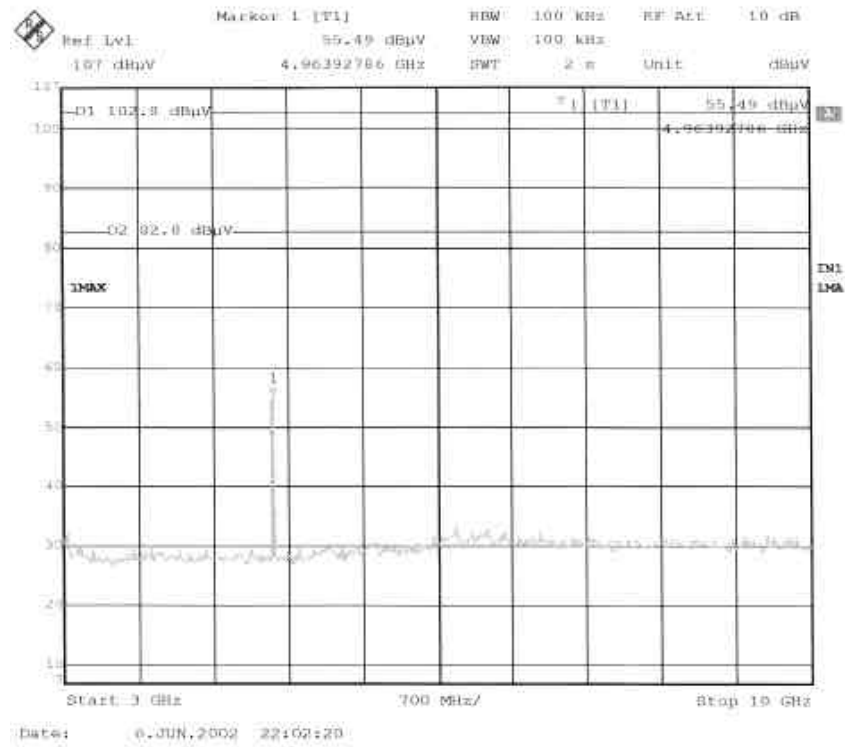


Spurious Emission(Conducted) :Tx(2480MHz)

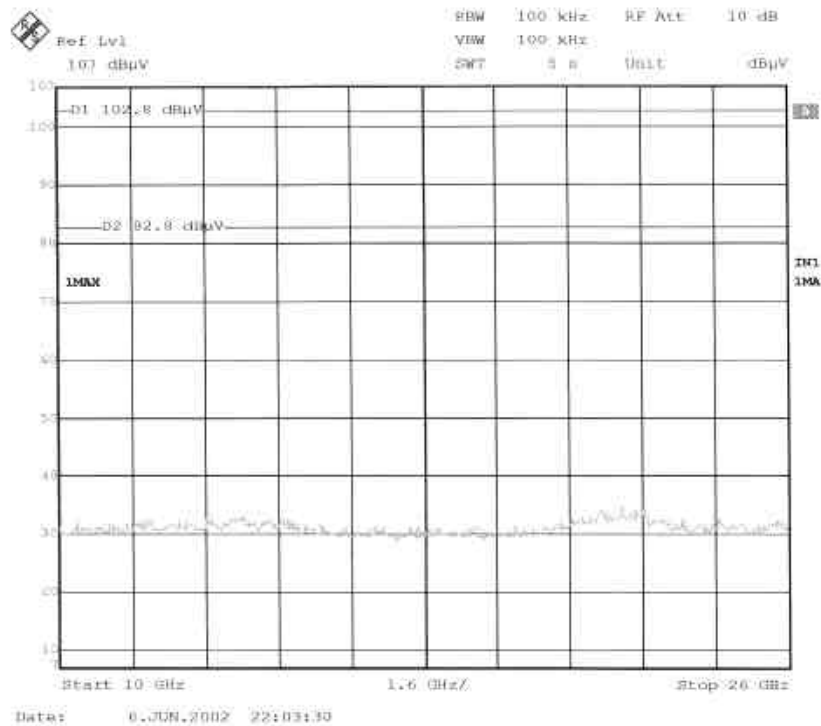


Spurious Emission(Conducted) :Tx(2480MHz)

81



Spurious Emission(Conducted) :Tx(2480MHz)



APPENDIX 3: Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	CE	2002/04/12 * 12
MCC-13	Coaxial Cable	Fujikura/Agilent	3D-2W-5m, 3D-2W-7m, 5D-2W-5m, RF SW1, 5D-2W-0.8m, RF SW2, 5D-2W-1m	CE	2002/05/09 * 12
MLS-05	LISN	Schwarzbeck	NNBM8125	CE(EUT)	2002/01/08 * 12
MLS-06	LISN	Schwarzbeck	NSLK8127	CE	2002/03/19 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	CE	2001/10/05 * 12
MSA-02	Spectrum Analyzer	Advantest	R3265A	CE	2001/10/11 * 12
MAEC-01	Anechoic Chamber	TDK	Semi Anechoic Chamber 10m	RE	2001/12/29 * 12
MAT-06	Attenuator(6dB)	Weinschel Corp	2	RE	2001/12/27 * 12
MTR-01	EMI TEST RECEIVER	Rohde & Schwarz	ESI40	RE	2001/11/13 * 12
MCC-04	Microwave Cable	Storm	421-011	RE	2002/01/14 * 12
MCC-06	Microwave Cable	Storm	421-011	RE	2002/01/14 * 12
MCC-01	Coaxial Cable	Suhner/storm/Agilent	421-014-10m,4 21-014-16m,42 1-014-7.5m,SF M86PE-15cm,8 765C,SFM141- 15cm,SFM141- 15cm,8765C,SF M141-10cm,87 65C,421-010-1 m	RE	2001/12/27 * 12
MPA-01	Pre Amplifier	Agilent	8449B	RE	2002/02/09 * 12
MPA-02	Pre Amplifier	Agilent	87405A	RE	2001/12/27 * 12
MBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2001/12/01 * 12
MHA-01	Horn Antenna	EMCO	3160-09	RE	2002/01/13 * 12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2002/01/13 * 12
MBF-01	SHF Bandpass Filter	M-City	5GHz BPF	RE	2002/04/30 * 12
MBF-02	SHF Bandpass Filter	M-City	8GHz BPF	RE	2002/04/30 * 12
MBF-03	SHF Bandpass Filter	M-City	13GHz BPF	RE	2002/04/30 * 12
MLA-01	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2001/12/01 * 12
MCC-11	Microwave coaxial cable	Suhner	SUCOFLEX 104	RE	2002/03/27 * 12
MTA-01	Terminator	TME	CT-01	CE	2002/01/08 * 12

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Test Item:

CE: Conducted emission,
RE: Radiated emission,

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